

Submission to the Productivity Commission enquiry into the provision of public infrastructure

This submission addresses only some of the areas raised in the enquiry and then only in general form. It is intended to question the basic assumptions that appear to prop up the approaches that are being taken in Government. It covers the following areas:

- Private vs Public ownership of infrastructure
- PPPs – advantages and disadvantages
- Cost of Infrastructure
- Encouragement of foreign construction companies to enter Australia
- Wivenhoe Dam class action

A brief description of the process required to change a light bulb is then provided to show how inefficient we are in modern Australia.

Private vs Public ownership of infrastructure

The ownership of infrastructure is not as important as the outcome in terms of:

- Efficient construction, operation and maintenance
- Long term planning flexibility
- Satisfaction of clients/users needs in an efficient manner

Much publically owned infrastructure is not efficiently operated and maintained; Sydney Water found 30% savings when maintenance was outsourced. Ausgrid could get similar savings if its maintenance and construction work was fully delivered by the private sector.

Strangely, in Australia we look to Government owned companies from other parts of the world to operate our infrastructure efficiently because our own Government owned corporations are seen as inefficient – a damning indictment on management of those institutions. MTR, effectively a government owned corporation, is seen as the world's best public transport operator. Singapore's Government owned public transport operator, PTB, is also seen as best in class. Not so efficient are the private operators in the US and parts of Europe. The conclusion is that private is not always better than public - what is required is good management and organisational flexibility.

Ownership by the private sector does not necessarily deliver efficiency. When the UK water utilities were privatised they wasted and lost large sums on expanding overseas. In Australia, Thames water set up operations which it eventually sold for very little. Thames also lost money in Thailand. United Utilities lost money in ventures in Asia but were successful to some extent in Australia before their parent companies reined them in and they retreated back to the UK to concentrate on core activities. The UK utility monopolies demonstrate that a private monopoly can be as bad as a public monopoly at delivery. With a guaranteed return on capital there is no need for efficiency. The UK found that selling off whole utilities just entrenched the status quo, poor work practices and poor design approaches.

Some private ownership is efficiently delivered but does not service customers well. Sydney Airport is an example of an efficiently operated airport with the sole objective of making money for its owners with little regard for the users of the airport. It does not serve customers well and as a monopoly it doesn't have to. I have waited an hour for a cab at Sydney Airport and the cab driver similarly queued for an hour – is this a sign of efficiency? Perhaps the answer was the large ad for long term parking over the taxi queue which showed where Sydney airport made more money. Taxis or parking, both are outrageously priced at Sydney Airport but the parking is much more profitable for the airport so passengers are encouraged to drive and park.

Sale of infrastructure is popular right now as it is seen to free up money for other investments. I cannot see how this works where infrastructure currently generates a reasonable return and cost of government debt is low. For example, imagine a desalination plant built for \$1b with an O&M contract in operation. The water customers are paying giving the Government a 5% return or \$50m per year. The government borrows at 4% so clears \$10m per year. If it sells the plant to the private sector at a yield of 6% (it may look lower but there is escalation built into the payment structure) the Government is guaranteeing a \$60m per year payment stream. The balance sheet may look better but the Government is \$20m per year worse off. Even the rating agencies should see that this is a worse outcome. If the government then spends the \$1b on new non cash returning infrastructure such as hospitals, for which it borrows at 4%, the Government is then \$60m per year worse off so investment in new infrastructure will not happen.

Selling the NSW poles and wires is reduces the income to the state by over \$1b per year. There can be no big spending bonanza as a result of the sale as there will be no cash to repay any further debt.

As a business person I see that the logic for selling off infrastructure is flawed. Better to get the infrastructure to be operated efficiently by outsourcing all the work and increasing efficiency of delivery. The poles and wires businesses in NSW could probably save \$500m per year if they were split up and maintenance outsourced per year. This would allow \$10b in additional borrowing on the back of improved revenue.

As a general rule all monopolies (e.g. power distribution) should be owned by the public and anything where there is a competitive market (e.g. power generation) should be privately owned. Where infrastructure is publically owned operations and maintenance should be outsourced in small competitive parcels so that maximum efficiency and competition can be achieved.

PPPs – advantages and disadvantages

Early PPPs revolutionised the way infrastructure was delivered. The early motorways and water treatment plants bought in new technologies, moved design risk to the private sector, increased automation, reduced labour forces and improved delivery efficiency. They also produced fantastic returns for early investors (just look at the CBA's return on the M5 Motorway).

One of the perceived advantages of those early PPPs was that they were seen as a way of avoiding Government and political interference in projects. Some deliberately had no variation clauses in the contracts to make it even harder to change the scope. What is wrong with the Governments if they cannot stop meddling in projects?

Many recent PPPs have been seen incorrectly as failures. They have been completed and provide service for the public even if the private investors have lost out. e.g. the cross city tunnel, Clem 7, Brisbane airport and Melbourne desalination plant.

A problem with PPPs that is getting becoming increasingly apparent, is the limitations they put on planning flexibility post award (e.g. Sydney airport Corporation's right of refusal on the Second Airport in Sydney, Eastern Distributor at capacity already but contract limits any competition). Any PPP needs to take a commercial risk and not be allowed to hamper subsequent changes. Most PPPs do not give back revenue when outcomes are improved by adjacent infrastructure being built but they complain bitterly if there is any perceived competition. The opening of the M5 east increased traffic on the M5 tollway by 30% but there was no clawback of the additional revenue. However, if a railway was built parallel to the road the complaints would be legendary. The PPP process is one sided in this fashion.

The cost of bidding PPPs is a major issue with bid costs now up to 2% of the construction price for some complex PPPs. PPPs have high bid cost because of the complexity of the bids, the number of players, the legal costs and the number of independent reviews each financier wishes to carry out. A design, build, operate and maintain contract would cost approximately half that of a PPP to bid.

Some people believe that PPPs are more efficient because of the more detailed oversight provided by the financiers. This is hard to believe – those very same financiers were responsible for the disastrous patronage estimates and for the wrapping structures that failed that caused PPPs to get such a bad name. The financiers add layers of consultants who add little productive but may increase costs by making all designs more conservative. A DBOM contract will get all the same innovation and life cycle input as a PPPs. In both cases, the construction and O&M companies do the hard work upfront and take all the delivery risk. Bankers are not good project managers despite their claims to the contrary. Bankers seek project management advice from the engineering profession.

Economic PPPs used to rely on tolls. The difference between a toll and a tax is blurred. Tolls are generally for specific items such as use of a specific road while taxes are for use of things like fuel or roads generally (registration fees). For users is there no difference between a toll collected by a private operator and a tax collected by the government. The effect on the public is the same except that tolls are usually less efficient to collect and there are incentives for a private sector owner to maximise collection while minimising the service cost delivered (charge tolls even if a toll road is clogged due to maintenance – sure).

Currently many financial institutions are wary of construction risk (most will just refuse patronage risk). As a result PPPs that include construction have an extremely high cost as a risk factor is added to the financing cost. Award of a DBOM contract funded by the Government and then selling the asset off is more efficient. Examples are the Sydney Desalination plant and the proposed West Connect motorway.

Cost of Infrastructure construction

Anecdotal evidence suggests that Australian infrastructure is a third more expensive than Europe and the US and 2 to 3 times that in China. A contract was recently awarded in Brazil for a 12.4km subway with 12 stations for US\$1.1billion (see IPA's newsletters). The North West Rail Link is costing say \$6b excluding land and rolling stock and has 8 stations (only 4 underground), 15 km of tunnel and 13 km of viaduct suggesting a cost of construction roughly 4 times the cost in Brazil. Something is clearly driving costs up. A quick check of the "Riders Digest" produced by Rider Levett Bucknall that gives comparative building costs shows that residential building costs in China are 25% of Sydney costs, warehouses are 50% of the cost while basement car parks are similarly priced.

The difference in cost is caused by a multitude of factors. Labour costs are one but labour is now a relatively small share of the total cost of a piece of infrastructure— it varies but 15-30% is typical. The lower share is when there are large piece of equipment or prefabricated items involved. Labour cost alone does not justify the difference in construction costs.

The cost of supervision in Australia is extremely large – it is driven by the reporting burden placed on all companies. I have seen projects in the oil and gas industry where supervision costs exceed labour costs. We have all seen one person digging while 2 or 3 other stand around watching and measuring. Over supervision is one area where costs are higher here than elsewhere.

A big cost driver is the overdesign and over specification of projects. A recent contract for a \$30m station had over 30cm of documentation provided. Imagine the problems a small construction company will have with this and the cost of reading, digesting and following this material. In this case supervision by the construction company and supervision by the client will be expensive.

Engineering design here is always aiming at world's best. It tends to specify how things will be done rather than being output orientated. It is like having a house designed by an architect each time rather than using a project home. The cost of an architect deigned home per square meter is usually 2 to 3 times that of a project home because designs are new, techniques often not well understood and tested, and equipment and materials are specified in detail leaving little room to negotiate with suppliers on price/delivery and little room to go and see what is available in the market that would do the same job.

We need to consider how much safety we design into our infrastructure. Changing safety standards is hard but why build the world's most advanced ventilation system in a new train tunnel when the trains will emerge from it and then enter a tunnel built in 1930 with no ventilation system at all? Money is not considered when safety is raised and safety is often raised by suppliers and others. For example on the Epping to Chatswood railway the tunnel is fully concrete lined yet some consultants were arguing that it also needed to have a fire protective layer added. The Lane Cove road tunnel has a separate ventilation tunnel and shaft plus the worlds most advanced fire protection and deluge system. Were these justified on a cost basis?

We need to question all designs, for example the Epping to Chatswood Rail tunnel should, in my opinion, have been unlined (like road tunnels are) with a concrete arch or steel mesh in the roof to stop the unlikely event of any rock falls damaging a train. The specification called for a water tight

tunnel – why? We adopt practices developed for other geologies and countries with little thought of why and the costs are extremely high.

Similarly can we afford the environmental measure we take? The tunnel under the Lane Cove River for the Epping to Chatswood Tunnel added a kilometre to the length of tunnel which was then reduced by removing a station. We all know that trains without passengers are more efficient but was this decision justified? When the city circle in Sydney was built, Hyde Park was effectively demolished and replaced with a pit. All those trees were planted after construction was finished – it is like a bad haircut – in a bit of time it has all regrown. We cannot afford the luxury of short term protection stopping long term good.

Productivity is a major issue. In China construction continues 24 hours, 7 days a week. Projects get completed quickly, equipment is used continuously and overheads are reduced. Pass any major road construction site here and most of the equipment is standing idle. We need to allow equipment to work continuously – it is like ripping off a band aid. Do it quickly and it hurts but it is over with quickly, it will also save a lot of pain.

Australia is one of the few countries where major pieces of infrastructure are contracted as single packages. . The problems with a singles package are:

- The main contractor is unlikely to have the best subcontractor in each speciality but will be locked in at tender time
- There are significant profit margins at each level in the food chain and the total cost includes margin on margin
- Once let, a single package is hard to change
- It is difficult to have nominated contractors or system wide suppliers
- Limited competition is available for large packages as few companies have the balance sheet and risk appetite for multibillion dollar contracts

Advantages are:

- Coordination risk is passed down to the main contractor
- Less expertise is required at the owners level

Singapore tried using single contracts for major pieces of infrastructure but retreated to multiple contracts. Australia seems to be the only country that persists with large turnkey contracts.

Lack of competition is often cited as a reason for high costs. This has been hard to justify given the low margins (often negative) of the major construction companies. The major companies have now become so risk averse that it may be a problem in the future. Governments have seen lack of competition as a reason to invite foreign companies into Australia – a better solution would be to reduce package size and grow more Australian companies (more on this below)

Encouragement of Foreign Companies to enter local market

Efforts to introduce foreign construction companies to increase “competition” in Australia are bizarre. No other country in the world encourages foreign companies to enter the market where there are already at least 2 local companies that have proved themselves as world class. Most

countries encourage local business to grow, to develop their expertise and then to move off shore. The Australian Government actively does the reverse; it does not trust local companies encouraging foreign companies to enter Australia.

Local companies can be encouraged to grow and compete by reducing package size, by encouraging them to use new technologies (preferably home designed), by not having ridiculous shortlisting criteria on experience and by using local experience as a selection criteria. Currently local companies face a catch 22 situation where they are not shortlisted because they don't have experience but can never get experience because they are never shortlisted. The water industry is notorious for requiring 25 years of experience by contractors knowing full well no local companies can comply.

Australian companies are seen as good for pouring concrete and providing labour but not having any technology. Israel built 2 large desalination plants, the first in a 50:50 venture with the French, the second on their own. On this basis Israel set themselves up as world experts on desalination. Australia has built 7 major desalination plants (total value around \$10b) but has not established any local capability in anything other than the basic construction because in every plant only foreign technology was considered and a foreign partner was required to get shortlisted. Extremely short-sighted. People wonder why Australian technology goes off shore – simply, government doesn't trust the locals so how can they ever develop. There is a serious technology cringe in government and private perception in Australia. Every design/technology/process has to be world class, best practice etc. i.e. foreign.

Australian consulting engineering firms were world leaders but are now gradually being absorbed into US and UK companies. Again the lack of trust in Australian companies is part of the reason. The initial reaction to any problem seems to be "how do they do this offshore?" (strangely usually the first place looked at is the UK where costs are also extremely high and the infrastructure is poor). Governments need to foster, trust and grow local expertise or we will become a nation of waiters, concrete pourers and taxi drivers when we should be a nation of technology leaders and project managers exporting our services to the world.

Wivenhoe Dam Class action

The owners and operators of Wivenhoe dam have a class action against them over flooding during the recent Brisbane floods– if this action is successful all public infrastructure providers will be liable if the infrastructure is not operated in an optimal fashion. The Wivenhoe Dam decreased the Brisbane river flood peak and delayed the flood. If the inflows to the dam had been forecast better the peak could have been further reduced by releasing water earlier, increasing early damage but reducing the ultimate peak of the flood. If dam operators are liable for not operating a dam in the best possible fashion – and the operators of Wivenhoe Dam may have operated it in the best fashion given the information that they had - then the implications for all infrastructure is enormous. If a train is late then the public may claim damages, if road repairs are not carried out in the most efficient fashion then there could be liabilities as a result.

The outcome would be that no council or government would provide public infrastructure like flood protection as it becomes a major potential liability. The private sector would stay well clear and infrastructure construction would stall.

Legislation is required to stop such claims.

How many Australians does it take to change a light bulb in an office?

This is not a joke; it is how it really happens. The sequence to get a light changed in an office tower is as follows:

- 1 tenant to see a bulb not working
- 1 tenant's representative to report it
- 1 landlord clerk/managing agents clerk to take the call and register a problem
- 1 maintenance company clerk to schedule a repair
- 1 Site supervisor to check out the site and see what is required
- 1 procurement officer to order light bulb in from China
- 1 health and safety office to inspect the site
- 1 labourer to put tape around the area being worked in
- 1 electrician to turn off the power and stand guard to make sure it is not switched again while the light bulb is changed
- Labourer then to get and hold ladder
- 1 electrician to actually change the bulb
- First electrician to then switch power back on
- 1 QA inspector to make sure light is working
- Labourer to then clean up
- Site supervisor to report job done
- 1 maintenance co clerk to send out invoice
- 1 land lord clerk to forward invoice to tenant

A total of 13 people but it doesn't end there. Because the cost is so high the tenant will not pay so the following people also get involved:

- 1 tenant manager to reject invoice
- 1 tenant lawyer to write a letter
- 1 landlord lawyer to reject letter
- 1 maintenance company accountant to send in revised claim, rejected by land lord and tenant and subsequently to send letter of demand
- 33 people in court

A total of 50 people to get one light bulb changed. And this doesn't include the multitude of people involved in importing the light bulb, checking it, packaging it, shipping it, getting rid of rubbish etc.

Not surprising that some buildings routinely change all light bulbs in one go every few years and just dump the old light bulbs. Is this productive? Environmentally good? Adding to the infrastructure cost? No, No and yes.