Dear Secretary

Thank you for your invitation of 6 December, 2013 to make a submission to the Committee's inquiry into the Infrastructure Australia Amendment Bill 2013.

Lend Lease was very supportive of the goals of Infrastructure Australia when it was established by Minister Albanese in 2008 and believes Infrastructure Australia has performed important work applying cost-benefit analysis to projects of national significance and prioritising those projects.

Similar attempts to develop institutional arrangements to formalise governance and decision-making regarding infrastructure prioritisation have also been undertaken by some states, for example Infrastructure NSW.

Lend Lease is very supportive of the Infrastructure Australia Amendment Bill 2013 and believes it will strengthen the independence and transparency of Infrastructure Australia's functions, thus reducing uncertainty. We support better infrastructure planning and prioritisation on a national basis underpinned by evidence-based approaches to procurement decisions that drive higher productivity in Australia.

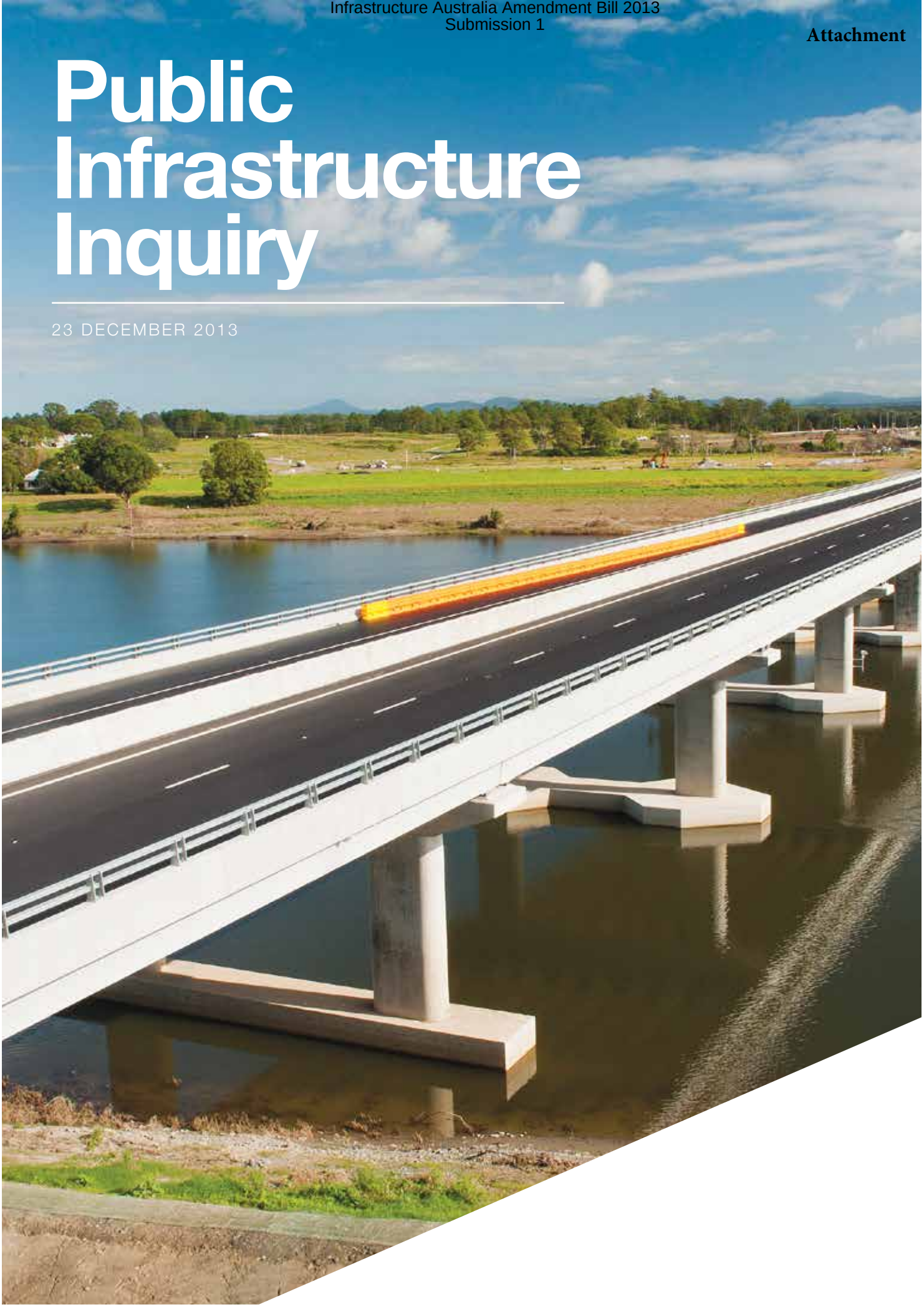
I have enclosed a recent Lend Lease submission to the Productivity Commission's Public Infrastructure inquiry for the Committee's information.

Regards

Attachment

Public Infrastructure Inquiry

23 DECEMBER 2013



Lend Lease

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Barangaroo South, Sydney, Artist impression

Introduction

Lend Lease's vision is to create the best places, which supports its strategic direction 'to be the leading international property and infrastructure group'. Our core lines of business are development, construction, investment management, services and ownership of property and infrastructure assets. The Group has clear priorities and is currently focused on the delivery and execution of its major projects, disciplined portfolio management, driving operational efficiencies and allocating capital to key growth platforms.

The Group operates a regional management structure focused on four major geographic regions: Australia, Asia, Europe and the Americas.

The regional business units generate earnings from four lines of business, as follows:

- Development: involves the development of urban communities, inner-city mixed-use developments, apartments, retirement, retail, commercial and healthcare assets;
- Construction: involves project management, building, engineering and construction services;
- Investment Management: involves property and infrastructure investment management, property management and asset management and includes the Group's ownership interests in property and infrastructure investments; and,
- Infrastructure Development: arranges, manages and invests in Public Private Partnership (PPP) projects.

Executive Summary

Lend Lease believes that developing world class public infrastructure is a critical element to our nation's future.

We strongly endorse the view that the efficient delivery of public infrastructure plays a key role in a competitive and productive economy and in meeting social and environmental objectives.

Real productivity improvement will only come from collaborative and focussed actions taken by industry and government.

Financing & Funding

We agree that alternative financing and funding models provide an opportunity to allow for the effective delivery of this infrastructure.

There is considerable scope to increase private financing and funding of public infrastructure projects. The Commonwealth can assist this by increasing the suite of financing and funding options available. This process needs to recognise the significantly different risk profile between developing a greenfield project, expanding capacity on a brownfield project or simply operating a mature asset. For example, the recent failure of greenfield road projects, where private finance has been raised on the back of user charges means it is now extremely difficult to raise private finance against unsupported user charges for greenfield assets. Alternative funding models will be required to support private sector finance with the day one forecasting risk ultimately required to be supported by the taxpayer. Once initial user volumes are established the private sector is equipped and willing to take long term growth risk in return for revenue profiles correlated to CPI/economic growth.

Large infrastructure projects take years to complete, without any immediate return to investors. Lend Lease's experience of private investment in significant infrastructure assets in Australia is that local sources of capital, particularly super funds, are reluctant to invest in greenfield asset development projects. Whilst returns on such projects for start-up investors can reach 12-13%, most local investors prefer the more conservative option of taking out part or all of an asset when complete, yielding around 8%. This points to the need for new and innovative capital accumulation and investment instruments, including infrastructure bonds. These instruments need to provide tax benefits on distributions to long term investors. There is also the capacity to capture the full range of value created by new infrastructure. For example, in some instances substantial value is created by investment in new transport infrastructure where property values are significantly enhanced.

Adelaide Oval, Adelaide

Recent experience has demonstrated that there is a deep demand for debt and equity financing of public infrastructure projects. Arguably there is a deeper pool of potential demand for equity investments in these assets from superannuation fund investors. The significant reduction in flows from debt capital markets since the GFC has meant infrastructure assets are now almost entirely reliant on bank debt for the debt component. As the volume and number of transactions grow bank demand for project financing will be tested. There is a growing need to develop an alternate to bank debt financing via establishing a deep and liquid debt capital market.

There is also a need to shift towards greater application of user charges as a basis for funding projects. This will require government to better sell the proposition to overcome negative public perceptions, particularly towards user charges for essential ("nationally significant") infrastructure.

Regulation

There are significant impediments to greater competitiveness and productivity, embedded in state and commonwealth legislation, local authority instruments, and mandatory building standards. They include inefficient state taxes on property, commonwealth and state duplication of environmental protection legislation, planning approvals requirements that vary significantly between local authorities, and utilities agencies that are often rooted in out-dated inappropriate engineering standards. Streamlining government regulation and appointing a Commonwealth Project Coordinator as a central single point of advice and coordination, as is done in Singapore,would facilitate a better alignment of objectives of the client and government and a more efficient approvals process and project delivery.

Competition & Productivity

The Australian construction industry is highly competitive and Lend Lease welcomes the entry of foreign competitors, noting they have been present in the Australian market for some years. In the engineering sector the vast majority of the companies we compete against are international companies – from nations including Canada, South Africa, Germany, France, Spain, the United Kingdom, Japan and the United States. This ensures that Australian engineering clients constantly benefit from the very best international experience available.

To be successful in this competitive environment Lend Lease has been focussed on the productivity challenge and through innovation and collaboration has delivered significant efficiencies in the way major projects have been designed and delivered. Addressing the cost of infrastructure requires looking at a number of key cost drivers, such as international commodity markets and supply chains as well as government approaches to regulation, procurement and pipeline coordination. However, in our view the productivity debate needs to be significantly broadened to examine a range of potential sources of productivity improvement – including prefabrication and modularisation, more interactive procurement, better use of collaborative technology platforms; further industrial relations reform; and increasing the skill and expertise of the industry.

THE IMPORTANCE OF PUBLIC INFRASTRUCTURE & PROVISION OF PUBLIC INFRASTRUCTURE

The delivery of public Infrastructure

The Issues Paper makes the point that historically, governments have played a dominant role in the provision, ownership and operation of major economic infrastructure such as roads, bridges, railways, airports, ports, telecommunication networks and electricity and water utilities. However, the models used or implemented for the delivery of public infrastructure assets and services have changed in recent decades.

No matter what model is used for the delivery of public infrastructure there remain two distinct components for government (federal/state/local). First, is the 'public good' obligation for the provision of adequate infrastructure to meet the community's needs. Second, is the funding of individual infrastructure projects. While there is a clear identified list of projects (i.e. Infrastructure Australia's Infrastructure Priority List and State government capital works programs), the funding environment for infrastructure projects has become more challenging.

One area where the scope of public infrastructure must continue to evolve over time is where changes in the industry composition of the economy lead to shifts in key economic drivers. The most recent example here has been the increasing importance of the mining sector. As a % of GDP, mining investment reached a record high every year but one since 2005-06. It recorded 7.5% for 2012-13, nearly three times higher than the previous high before 2005-06. This has seen mining-related infrastructure increase in importance – and become much more of a focal point for public infrastructure investment than in decades past (most notably from Federal Land Transport funding, but also at the State level).

In the years to come, a similar shift may be required into the provision of agricultural-related infrastructure. A recent report by Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) pointed to the need for major investment should the agriculture sector experience sustained growth over the medium term.

How is the need for Public Infrastructure measured?

In general, the level of demand (with respect to capacity utilisation) in combination with projections of the key demand drivers establishes the need for investment in public infrastructure. There is typically a priority given to this need where nationally significant infrastructure is involved.

However, the process of establishing the need for public infrastructure varies somewhat by infrastructure sector. Specifically, in those infrastructure sectors where access/demand is only possible via paying the price or user charge, the need for infrastructure is generally well understood. These sectors include power, ports, telecommunications and (to a lesser extent) rail.

With rail, the regulated access price is usually well below cost; as such, investment generally trails the level of (expected) demand. However, there are signs of increased private sector interest in provision of railways, which suggests less opposition to the price being closer to cost than in years past.

Roads are much closer to what is known in economics as a 'public good' (i.e. where access is non-rivalrous – my use of the road does not prevent your use of the road – and non-excludable – it is not possible to prevent access to the road in exchange for a usage fee). However, while public goods often suffer from underinvestment, investment in roads typically fares much better than that of other infrastructure sectors, in large part due to the well-established strength of demand for roads for passenger and freight use.

An unusual characteristic of roads investment is that, despite it being more difficult to ascertain the level of demand on roads compared to other infrastructure sectors, instances of overinvestment in roads are relatively rare. The only recent instances of overinvestment in roads have been for privately financed projects, where access charges were viewed (by the public) as too high for the benefit (faster travel times) received.

The water sector has seen overinvestment in recent years, specifically, for provision of water in urban areas. In this case, both private and public sector provision ultimately led to overinvestment. While understanding demand is most important for other infrastructure sectors, with water, the interaction with supply is more important.

Overinvestment can also be seen where sudden innovations in supply can combine with long-term programs of planned investment. The electricity sector had seen steady growth in demand over many years. Combined with past under-investment and the propensity for strengthening peak demand, the proposed surge in investment to finish in the early to mid-2010s aroused little serious opposition when approved. Weaker demand from other sources – such as less extreme weather, closure of major power users and more efficient consumer appliances – has combined with the shift to rooftop solar to lead to total demand falling back to levels seen in the mid-2000s.

Gateway Bridge, Brisbane

How public infrastructure is currently funded?

Public infrastructure is typically funded by a mix of user charges and access to general (Government) revenue. However, a medium-term view of pressures on State and Federal Budgets highlights it will be increasingly important for public infrastructure to be funded by user charges rather than from general government revenue.

The need to shift towards user charges as a basis for funding will need a change in public perceptions, particularly perceptions towards user charges for essential ("nationally significant") infrastructure.

In terms of increased financial pressures on government, private investment will continue to play a greater role in the funding of public infrastructure.

The needs of the community for economic and social infrastructure require reliable, patient, sources of capital that recognise the long term nature of the investments. Large infrastructure projects take years to complete, without any immediate return to investors. Lend Lease's experience of private investment in significant infrastructure assets in Australia is that local sources of capital, particularly super funds, are reluctant to invest in greenfield asset development projects. Whilst returns on such projects for start-up investors can reach 12-13%[1], most local investors prefer the more conservative option of taking out part or all of an asset when complete, yielding around 8%.

This points to the need for new and innovative capital accumulation and investment instruments, including infrastructure bonds. Instruments need to provide tax benefits on distributions to long term investors.

What models exist to provide public infrastructure?

The Roads sector provides a good case study of the models used to provide public infrastructure. It utilises all levels of government and both Federal and State governments provide significant investment to lower levels of Government to assist in adequate levels of expenditure for financing and/or funding. Additionally, this is a sector which has seen significant levels of private involvement.

This overlap between levels of government can create inefficiencies. The creation of the National Network saw a considerable increase in the road network eligible for major Federal investment (financing), but a key condition of the formation of the larger National Network was State financing/funding contributions – especially on roads not previously under Federal stewardship. This has led to disagreements between the Federal and some State Governments over contributions to financing, which in turn has seen some major road construction delayed.

Furthermore, over the last decade, accompanying the increase in the size of the network eligible for major Federal investment was a large jump in Federal major road financing (some of which was due to the GFC-initiated stimulus package). However, the Federal (baseline) contribution for maintenance (funding) of the National Network was held at $300m per year for many years until 2008/09 i.e. long after the jump in Federal financing spending. The maintenance contribution was finally boosted to $350m per year from 2009/10. Given the costs growth experienced during the 2000s and the increase in the network of roads with the shift to the National Network, this has necessitated a greater ongoing State funding contribution.

The act of cost-shifting has also been seen at the State level, with roads among the assets or responsibilities reclassified from state to local ownership, but often without a corresponding increase in funding. Cost-shifting is somewhat more difficult to overcome for Local Government in NSW, where the maximum allowable increase in local council rates is set by the State Government's pricing tribunal.

Private provision of roads in Australia in the modern era started with the Sydney Harbour Tunnel and M4 Motorway projects in NSW and led to largely beneficial outcomes through the 1990s in Sydney and Melbourne. More recent private involvement has seen demand fall not only below optimistic forecasts, but also below more normal levels as drivers avoided what they perceived as high usage tolls.

Despite these recent failures, there is still significant scope for further private involvement. This may be seen with large complex urban projects, where increasingly innovative financing techniques are being used in order to overcome recent failures. These techniques could also be used in less traditional areas, such as provision of upgrades to regional highways (e.g. Pacific, Bruce), as well as privatisation of existing major urban corridors. This would ease the burden on public finances (expected to come under increasing pressure over the medium term), but not at the expense of road quality. For example, the NSW Auditor General found that the M4 Motorway quality was maintained sufficiently in the lead-up to its return to NSW Government ownership in 2010.

1. Source: Managing Director Capella Capital, John Bowyer, interviewed 19 November 2013.

Role of government

There are significant local impediments to greater competitiveness and productivity, embedded in state and commonwealth legislation, local authority instruments, and mandatory building standards. They include inefficient state taxes on property, commonwealth and state duplication of environmental protection legislation, planning approvals requirements that vary significantly between local authorities, and utilities agencies that are often rooted in out-dated inappropriate engineering standards, and inefficient and expensive ports. We note the recent announcement by State and Commonwealth Ministers to create a 'one stop shop' approach to planning and environmental approvals as a step in addressing this problem.

The Productivity Commission's Draft Report on Major Project Development Assessment Processes, released in August 2013, identified significant opportunities to win efficiencies. The report points to several issues, and makes recommendations to deal with them, that Lend Lease generally endorses.

The construction industry is typified by dramatic swings in work volumes and competitive market conditions. Most recently the non-residential building and engineering construction sectors experienced record work volumes in the five years to 2008, when the global financial crisis hit investor confidence declined and work volumes were savaged. The industry has for many years put forward that government planning for public projects should have a horizon well beyond the next electoral cycle, and maintain a reserve pipeline of projects to be used to maintain industry capacity and employment when the private sector demand falls dramatically, as was the case in the latter stages of 2008. Infrastructure Australia's 'infrastructure priority list' is a good first move in this direction and would be greatly enhanced if augmented by State Government's key projects, coupled with a commitment from government to an integrated delivery program.

Further, we suggest that the Commonwealth consider appointing a Commonwealth Project Coordinator as a central single point of advice and coordination, as is done in Singapore, for all significant building and infrastructure projects. This would help to facilitate, apart from other benefits, a better alignment of objectives of the client and government utilities that have considerable influence over the speed and efficiency with which project approvals are secured.

A secondary objective of having such a Coordinator should be the identification of outdated utilities requirements.

Over the past decade there has been a trend more risk being shifted from client to contractors, in many cases without regard to where control and management of the risk lies. This includes contractors waiving their rights to the protection of the statute of limitations, acceptance of risk associated with governments' own designs, and contractors accepting risks that might be appropriate to alliance projects, but not on D&C projects.

Project risks are known early in the asset delivery process, starting with the client's brief. The brief and commercial documents that flow from it should be aligned, ensuring appropriate risk management protocols are implemented, and driving minimal rework and enhanced functionality.

Using Early Contractor Involvement delivery strategies and Building Information Management (BIM) in concert has the potential to drive real productivity gains, particularly if the same project team is appointed to deliver more than one project in sequence.

In the current market for larger building projects, client procurement strategies often do not align reasonably with contractor's requirements to manage risk and costs and contingencies.

Many contracts are presently tight and not conducive to delivering the service needed. For this to happen there needs to be alignment of objectives – this does not happen now in the majority of contracts.

Efficiency of the current decision-making and institutional arrangements.

While the framework for formalising decision-making and institutional arrangements regarding infrastructure development has increased over the last decade, there are still instances where analysis and advice from these bodies is overridden.

This is a sub-standard outcome, for several reasons. These relatively new decision-making and institutional arrangements have shown themselves to produce strong analysis and clear advice towards the best course for major infrastructure investment.

When the analysis and advice of these new bodies is overridden, it increases uncertainty on the part of contractors and others who rely on clarity of major government spending decisions. The framework put in place over the last decade could potentially lead to an increasingly comprehensive pipeline of infrastructure investment, with subsequent iterations to possibly lead to greater insight and detail regarding funding, financing and timing of major investment.

Another weakness of the current framework is that the justified concern over cost blowouts may lead to some public infrastructure development not being undertaken. Where major transport infrastructure can have a life of up to, or even over, 100 years, too much of a focus on costs of financing may lead to inefficient outcomes with respect to benefits foregone.

As concerns about cost blowouts and a high rate of cost growth for much infrastructure development has heightened, there are increasing calls to make greater use of cost-benefit analysis as the main arbiter of whether projects proceed.

In the pre-project phase where cost-benefit analysis takes place, the inherent nature of forecasting means there is greater clarity on financing costs (a horizon of six years at most) than on benefits when the project is in operation phase (a horizon of at least 30 years, if not many more).

One recent project which experienced a significant cost blowout, but which has led to considerably greater benefits than expected was the Regional Fast Rail project in Victoria. Originally slated to cost $80m, the final cost blew out to $750m. Since this project's completion in 2006, patronage growth has been strong and consistent – 30 per cent within a year, 100 per cent within five years, with further growth since leading to orders for new car sets to cater for three-fold growth.

Clem Jones Tunnel, Brisbane

FUNDING MECHANISMS

The Commission's terms of reference seem to confine themselves to economic infrastructure. The Issues Paper defines economic infrastructure as "the physical structures from which goods and associated services are used by individual households and industries". The Commission specifically identifies these as including transport, communications, energy, water supplies and sewerage treatment. It excludes social infrastructure such as education, health and community services. This distinction is important because economic infrastructure is, broadly speaking, much more amenable to charging regimes thus reducing pressure on the public purse.

Perhaps the energy sector deserves the closest scrutiny in this regard as it offers the most mature model for examining the issue of funding being sourced entirely from the private sector. Users pay for the full costs of delivering this service through a combination of market forces in the generation and retail sectors and regulation (of the distribution network and to a limited extent in aspects of retail). The National Energy Market in eastern Australia has been operating for more than a decade and produces energy to Australian consumers well below the long run marginal cost of generation. The cost to serve customers by retailers is also extremely efficient. The cost of distribution is regulated and is arguably high on global standards but this is due to a combination of the performance standards set-by governments and the costs that accrue to providers associated with the delivery of essential services. To the extent that government determines that there are broader public policy issues that it believes the industry should deliver, it intervenes in the investment decision making process for new infrastructure by introducing policy reform of general application (e.g. carbon tax, renewable energy targets). These policy settings influence market behaviour to deliver appropriate investments in new infrastructure. This model has, generally speaking produced a world standard service and product at a highly competitive price in terms of generation and retail. To that extent, scope for further improvement in quality and cost of the service to individuals, households and industries lies in the privatisation of these assets and the application of commercial disciplines in their operating performance and cost structures. The funding for the production, transport and retailing of energy is fully met by the user and in theory this involves full cost recovery and a return on investment for the owners of the infrastructure.

Water infrastructure is less clear cut and is reliant on the policy approach adopted by state governments. We believe only NSW has cost reflective pricing. In most jurisdictions the supply of water is funded by a hybrid of user pays and government subsidy by way of operating grants or capital contributions to the infrastructure owner. The opportunity exists to progressively increase the proportion of user pays into the funding formula. This is however limited by the preparedness of the market to bear such increases before there is a political response which will involve the taxpayer sharing the broader burden - at least to some degree.

Transport infrastructure is a much more complex set of issues from a funding perspective and the situation differs between transport modes; where the infrastructure sits in the supply chain and who the dominant users are. At one end of the transport spectrum sits the rail and port infrastructure that services mature mineral provinces or energy basins. These are fully funded by the user groups, including providing a return on the investment. At the other end of the spectrum is the public toll free road which is fully funded (one way or another) by the taxpayer. In between there are many variations on the theme but, in general terms transport infrastructure is either funded by the user in full or in part or the taxpayer in full or in part.

There are many challenges with the funding models currently in play. Even where the new transport infrastructure required is brownfield, there can be significant difficulties in passing the cost, along with the benefit, to the user. For example the lifting of the height of a rail underpass to allow large trucks to avoid substantial detours (and hence improving their productivity) creates value for the truck owner but at the expense of the owner of the rail infrastructure who is necessarily the investor but without being able to recover the cost and an economic return on their investment. This model also struggles to facilitate the creation of greenfield infrastructure which might, for example open up a whole new resources precinct. Unless the taxpayer shares some of the funding burden in the formative period of the infrastructure life it is unlikely that the private sector will be able to absorb the funding risk that is associated with the pace by which demand grows. Designing models that can address these funding issues is, however, fundamental to successfully financing these sorts of projects. The models need to ensure that revenue can flow back to the infrastructure owner who has created the external benefit, in the first case. And funding needs to be sculpted into a profile across the life of the project to enable it to be financed. This may require a level of commitment from the public sector to support the private sector financing strategy.

On the question of alternative or new funding models perhaps one principle worthy of further pursuit is whether

there should be some greater recognition of the capacity to capture the full range of value created by the provision of new infrastructure. For example in some instances substantial value is created by investment in new transport infrastructure where property values are significantly enhanced. If such a principle is adopted it also needs to be recognised that the corollary to this is that where new infrastructure injuriously affects someone, they may correspondingly also wish to be compensated for their loss.

In terms of considering the costs and benefits to be taken into account in applying a user charging regime the initial question to consider is how to best establish a balance between the benefits the individual is obtaining from the infrastructure and the broader public interest that is served by virtue of its existence. The second aspect of this question is then how to strike a fair allocation of value between the two. The key impediment to a full pass through of costs (including a return on equity) is the political impact on the individual user. There is no simple answer to how to move to a sustainable state of a user charge being fully price reflective.

Placing the decision making on this question in the hands of an independent arbiter, at arms length from government would be an important step in the right direction.

The question of the differences between greenfield and brownfield projects risks and the implications for funding (and therefore financing) is a particularly important one. While ideally the cost of utilising the infrastructure should be based on a tariff that reflects the leanest possible cost inputs (including the cost of funds) this neglects to take into account the significantly different risk profile between developing a greenfield project, expanding capacity on a brownfield project or simply operating a mature asset. In certain circumstances this challenge can be overcome by the private sector itself by certain development companies being prepared to take the development risk and capture the reward for this at the point of sell down to long term holders of the asset. These long term holders of the asset are likely to have a lesser appetite for development risk but are able to pay the developer for having removed that risk. In other circumstances it may mean that the state would need to underwrite or potentially absorb some of this risk itself if financiers are to get comfortable with banking the project.

The recent failure of greenfield road projects, where private finance has been raised on the back of anticipated user charges; means it is now extremely difficult to raise private finance against unsupported user charges for greenfield assets. Alternative funding models will be required to support private sector finance with the day one forecasting risk ultimately required to be supported by the taxpayer. Once initial user volumes are established the private sector is equipped and willing to take long term growth risk in return for revenue profiles correlated to CPI/economic growth.

Whilst the use of availability payments is increasing in response to the private sector's inability to finance start-up patronage/user charge risk it is being offset by government taking the initial ramp up risk after which the toll revenue can be sold by the State. Availability payments are also priced considerably lower than patronage or volume risk greenfield projects.

On the issue of capital recycling it is important to learn from the experiences of state governments in conducting asset sale programs over the last two decades. One of the key challenges has been securing public support and providing a clear case to the public in favour of the sale and an honest discussion on the case against the sale as a precursor for the sale occurring and developing the trust of the community. There are many aspects of public ownership that are not immediately apparent to the public. For example the initial capital cost of infrastructure projects are only part of the cost structure. Most public utilities are highly capital intensive and represent a recurring drain on the public purse. Concerns that the standard of the infrastructure will deteriorate under private ownership are also largely without foundation. Government can still set the standards for service delivery, asset performance and maintenance requirements where appropriate. There are, however three key factors for government to consider in divesting assets from public to private ownership.

1. The importance of looking at industry structure post the sale process and whether the divestment will lead to improved productivity and competition? The sale process should ideally result in improved services to the consumer and less burden on the taxpayer.
2. The capacity of the business to continue to invest in the new infrastructure to meet the requirements of the customer base - rather than simply regard the investment as a static yield stock. This is particularly important for utility style businesses.
3. That government has a clearly articulated policy around what it intends to do with the proceeds.

Ideally this involves the investment in new economic infrastructure either where the market is failing to grapple with certain development risks (such as the ramp up profile on demand) or where it is clear that only government is able to capture the full value created by the new infrastructure (e.g. where government can capture royalty stream, stamp duties, payroll taxes etc.). Different strategic approaches may be taken depending on the circumstances. At one end of the spectrum is full government financing. In this circumstance government would take the full risk, develop the asset and hold it until mature and then divest. At the other end of the spectrum, government might simply forward purchase some volume, contribute patient second ranking (but higher performing) equity, or contribute low interest loans. Obviously governments initiatives in this respect would need to be based on a strong, transparent business case and rigorous due diligence on the underlying economic drivers. If, for example the case was put for government to finance the infrastructure to open up a new coal or gas basin, substantial due diligence would need to be done on the competiveness of the resource into the global market and why government investment would produce the most efficient response. This argument could, for example, have resulted in the government developing and financing the trunkline skeletal infrastructure for the Surat gas projects. This would have avoided the duplication of infrastructure to service the independent projects transporting gas from the Surat to Curtis Island. Such an approach may also have merit in unlocking the Galilee coal basin. In these cases the funding would be met entirely by the user groups although, in the case of the Galilee, there is likely to be a funding shortfall in the early years that government would need to absorb. Notably, the strategy is also based on the assumption that once the second generation of infrastructure investments are mature and have served their purpose, they too will be "capital recycled".

In light of the issues associated with limited super fund appetite for risks of development, construction and asset reaching operational steady state, simple and uniform rules on sell down would be logical.

Certain public infrastructure assets will not lend themselves to applying user charges which represent the incremental cost of the public infrastructure being built (e.g. an expansion of an existing light rail line or addition of a further heavy rail tunnel/ crossing) to fares of existing users. This clearly leads to the need to consider other means of funding such as across the board user charge increases or State/Federal government subsidies.

There is also the issue in defining the total value in terms of the social benefit with the concept of "user pays" and how it applies to social infrastructure and service such as Health Care, Corrections, Courts and Schools problematical.

Whilst project financiers will look at construction and operations phase risks separately, the lowest common denominator between the two will invariably dictate terms applied to all of the financing. In the case of greenfield projects involving start-up user charge forecasting risk this will be the lowest common denominator and bring the efficiency of financing applied to the whole of the project down accordingly. Construction risk is generally well understood by financiers and depending on the credit quality of the contractor is often accepted. Projects which augment existing facilities or networks are acceptable if the interface issues and risks on the existing system are easily measured by the private sector. If this is not the case they should be retained by government.

Quantification of overall residual asset life, life cycle issues, and latent issues, exposure to legislative change impacts and long term adaptability to technology change all require consideration.

In some social infrastructure categories (especially health) revenue stream generated by paid car parks, ancillary retail, childcare and hotel accommodation are common. Outright transfer of Land Title and/or length of lease need to be flexible and not tied to the length to the duration of the Concession.

Significant revenue is derived by government during the construction of capital works assets, in taxes on the incomes of workers, and taxes on goods, materials and equipment included in the assets. Capital gains, land taxes, stamp duties, and local authority rates and charges, all also garner further revenue for all levels of government. As suggested above, these revenue streams could be hypothecated to investment in new infrastructure.

The tax loss incentive for designated infrastructure projects that came into effect in July 2013 is a welcome initiative, albeit limited in scope. Other options that have proved useful elsewhere will no doubt be considered by the Productivity Commission, including the use of tax increment financing to fund infrastructure. The options canvassed by the Infrastructure Finance Working Group in its April 2012 report Infrastructure Finance are also worth reviewing.

Anzac Bridge, Sydney

FINANCING MECHANISMS

On the broad question of private financing of public infrastructure it is fair to say that there are large pools of investment dollars theoretically available. This is particularly so for mature brownfield assets which offer stable predictable cash flows and yields. In this space large superannuation funds dominate the market. Second tier super funds are less prevalent due to the prudential requirements of fund regulators, and in particular, the requirement for liquidity in the funds. Infrastructure assets in Australia are not highly liquid. There is also a smaller pool of investors who are prepared to take development risk. Few super funds (even large ones) have development capability. The development capital required for large infrastructure projects can be very substantial and the risks are high and the investment return gestation period long. With the development phase there is also the risk around regulation and approvals. These risks can include not receiving approval to proceed or approval but with conditions so onerous to threaten the economics of the project. Again this is an area where potentially there lies a greater role for government in sharing or absorbing this risk.

The impact of changing risk profiles over the lifespan of a project on financing is a key issue in a number of cases. How this change in profile impacts on the project economics varies depending on the asset class. If the asset is in the transport haulage for natural resources sector the financing is likely to be underpinned by long term take or pay agreements with creditworthy counter parties. Management of financing risks will be largely focussed on ensuring that the dynamics of the market for the product are capable of being absorbed by the user over the course of the take or pay agreement or the asset life; that the resource itself is competitive with the global market and that there is sufficient overall demand for the infrastructure service within the region it operates.

If the asset class involves the supply of bulk water a key risk to manage over the life of the asset is the weather outlook and its impact on demand and supply. This is an asset class where demand is much more vulnerable to fluctuation over time than, say, the transport sector, where, broadly speaking, demand can be assumed to grow (albeit at an unpredictable rate.) Sharing the demand risk for water supply projects represents a key challenge for private sector investors and may be something that only a government is able to manage. The alternative approach is to attempt to share the responsibility for sharing this risk between the public sector and the private sector by placing caps and collars around patronage levels.

There is no single answer to the question of whether governments can or should bail out private sector providers if they are in danger of insolvency. In some case such action will be warranted in the public interest. In other cases where the public interest in terms of continuity of supply of an essential service is not at risk governments have tended to let the market produce a solution. In general terms, governments can be fairly confident that lenders who seek to enforce their rights as a result of covenant breach of a loan facility will be motivated to protect as much as possible of their loan value. Hence a receiver or administrator will be strongly disposed to ensuring continuity of service and maximizing revenues - obviating the need for government intervention.

The allocation of risks between the public and private sectors on infrastructure development and investment should follow the broad principle of “the party who is best placed to manage the risk should shoulder the responsibility.” The application of this principle involves many individual and project specific judgements. It is also the case that the responsibility for a risk is also often time based and shifts over the project life. For example the quality of the original capital investment is a key determinant of the economic performance of the asset over the course of its life. Hence the original investors, developers and contractors may not necessarily be the long term owners and therefore, don’t necessarily share the same economic drivers or have a common perspective on risks and the investment that should be made to remove, limit or manage them.

The trend towards increased capital recycling for financing public infrastructure investment has significant merit, although not without risk. From an economic perspective, the use of proceeds of privatisation for the financing of subsequent provision of public infrastructure is much more prudent than directing these towards recurring government expenditure or to lower tax rates/user charges. This is especially the case given budgets at all levels of government are expected to come under increasing pressure in the medium term.

The NSW Government’s recent decision to use the proceeds of the privatisation of Port Botany to finance the first stage of WestConnex may come to be viewed as an optimal example of capital recycling. This will involve widening the existing M4 Motorway – which was previously a privately owned (and tolled) road – with plans to subsequently (re)privatise this road in order to finance subsequent stages. That the M4 is an existing motorway which was previously tolled increases certainty that

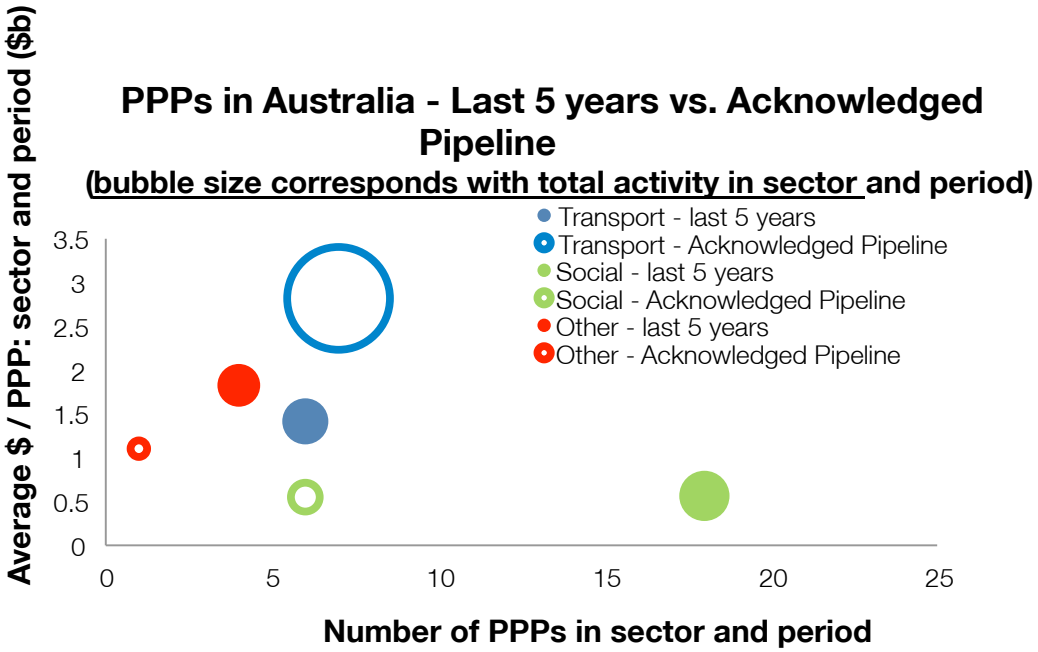
demand for the widened road will be robust, which in turn should see strong interest from the private sector.

However, there is a risk that this type of funding could fall victim to overuse, which may lead to lower than expected returns and hence available capital for financing.

Infrastructure Australia has indicated more than $100bn in public assets may be suitable for privatisation and subsequent capital recycling.

The privatisation pipeline needs to be coordinated with the pipeline for public infrastructure so as to ensure maximum returns and the most efficient investment takes place.

With an increasing proportion of the public infrastructure in major transport investment, it is of little surprise transport is expected to account for the majority of private provision of infrastructure in the years to come (see chart).



Source: Infrastructure Australia, Infrastructure Partnerships Australia, Lend Lease Group Research

To what extent is unavailability or cost of private financing for public infrastructure projects an impediment to efficient investments taking place?

Recent experience has demonstrated that there is a deep demand for debt and equity financing of public infrastructure projects. Arguably there is a deeper pool of potential demand for equity investments in these assets from superannuation fund investors. The significant reduction in flows from debt capital markets since the GFC has meant infrastructure assets are now almost entirely reliant on bank debt for the debt component.

As the volume and number of transactions grow bank demand for project financing will be tested. There is a growing need to develop an alternate to bank debt financing via establishing a deep and liquid debt capital market.

What are the relevant costs and benefits that should be taken into account in weighing up the choice between public and private sector financing mechanisms?

At the base level analysis and discussion of this issue has focussed on the pure cost of private versus public sector funding, but any detailed analysis should focus on the extent to which the presence of private sector funding achieves one or more of the following:

- Introduces an element to the transaction that forces a binding together of disciplines (such as Design and Construct and operations) that would otherwise be left to be developed separately with little regard for each other;
- Imposing a cost discipline over the whole project that would not be brought to bear if left with any one interest group or a government department itself;
- Shifting to the private sector interface risks between component parts of an infrastructure development which would otherwise be left to be managed by the government;
- Benefits over time from de-politicising the focus of asset management leaving the private sector to focus on achieving outcomes unmarred by the numerous political cycles which will occur during the life of a public infrastructure asset; and,
- Level of innovation, speed to project/asset completion and real risk transfer compared to the extra cost of private funding.

How effective are existing arrangements and tools used to compare different financing mechanisms for public infrastructure?

The comparison of public and private delivery of public infrastructure assets quite often involves the development of a Public Sector Comparator with accompanying risk margins/ discount rates. These are invariably shrouded in secrecy with little detail available as to how they are built up and arrived at. The lack of transparency and information on how these are determined from project to project makes it difficult to comment on the tools being used by governments to make threshold decisions as to whether projects should be funded via traditional methods or via the use of private sector finance.

To what extent does the early commitment of financing reduce or eliminate the potential development of efficient funding mechanisms (charges and taxes), particularly user charging systems?

If structured appropriately the early commitment and involvement of private financing should not inhibit the potential development of efficient funding mechanisms. Examples of this are recent projects such as EastWest Link in Melbourne whereby the asset is being delivered via a privately financed PPP with the government separately developing and applying a user charge regime and levying these directly on users.

Access to private funding

What is the extent of competition in the market for private financing of public infrastructure projects, what factors influence this and does this differ by the type of infrastructure?

As outlined above there is a significant amount of competition in the market for private financing of public infrastructure projects. Equity in particular is well serviced through the weight of superannuation funds seeking long term stable cash flows of a type typically associated with infrastructure.

Should the Federal and State governments deliver in line with their current dialogue potential shortfalls in funding/ competition may be experienced in the area of debt with this being serviced almost entirely by banks. There is a clear need to create an alternate source of debt capital such as through the development of a deep and liquid market for capital market debt.

What has been the effect of the National PPP framework and guidelines, endorsed by the COAG in 2008, in assisting the public and private sectors to improve delivery of public infrastructure assets? Is there scope for further reform to PPP processes, and if so what measures should be considered?

Experience has shown that State governments tend to apply and stick to the National PPP framework and guidelines to varying degrees. It is common practice for State governments to seek to vary established risk transfers based on the differing views of transaction managers and Treasury representatives involved in the development of project briefs.

There is clear scope for a review of the extent to which State governments are choosing to tweak and finesse core principles under the guise of 'project specific circumstances' calling for changes to core principles.

What is the likely effect of recent changes to the taxation treatment of business losses made by eligible infrastructure project entities? What is the rationale for such concessional tax arrangements?

These changes will contribute positively to equity investors interested in investing in public infrastructure but are potentially limited in their application through only applying to selected projects up to a certain total dollar amount in total project size.

Hunter Expressway, NSW

FINANCIAL RISKS TO THE COMMONWEALTH

The Commonwealth seems to generally be exposed to the same or similar risks to a state government. If the Commonwealth decides to finance a project fully then it is exposed to the full risk. If it adopts a partnership approach it is subject to the risks as agreed to as part of the partnership agreements. Having said that no government can completely divest themselves of the political hazards that go with government involvement in the delivery of an essential service or spending public funds. Hence the efficacy of their processes is always likely to come under public scrutiny.

Given lower financing costs available to the government versus the private sector, there is a trade-off in PPPs for government between financing costs and project risk. If governments take on project risk upfront, they are able to lower their financing costs (e.g. a WestConnex-style arrangement)

The risk is that this may cause problems in an environment of budgetary discipline where governments are likely to need to recycle capital used to fund infrastructure over a relatively short horizon. If government funds an infrastructure project in its initial phase but the project fails to attract sufficient interest from the private sector, the government may need to accept a lower than anticipated price or hold the asset for longer.

Hunter Expressway, NSW

COSTS OF INFRASTRUCTURE PROJECTS

Productivity Information

- There is no question that inadequate planning, particularly in our major cities, has meant that failure to preserve road and rail corridors adds a premium to the subsequent costs of providing the infrastructure.
- Equally, the cyclical nature of the construction industry, together with insufficient coordination between the Commonwealth and State governments around timing of major infrastructure projects has been a driver in a decline in labour productivity over the past decade: a period which also saw wages grow more strongly in the construction sector than in the overall economy.
- While the resources boom has seen the costs of physical capital soar in recent years (construction and mining equipment sales rose by 23% in 2011), intermediate costs have increased at a significantly higher rate than wages and salaries in the construction sector. For example, Lend Lease Engineering in NSW experienced oil prices rises of approximately 200% in the decade to 2013; asphalt by 110% and concrete by 63% in the same period.
- Pricing trends can also reflect regional markets, with most cost categories seeing higher levels of cost (and higher growth rates) in the major capital cities.
- Multiple levels of government approvals for planning and environmental impacts adds unnecessary cost as do Australian Standards which don't reflect global supply specifications or state and territory differentials in law.
- The construction market is competitive on international comparisons and there appear to be no unique Australian barriers to overseas contractors operating here. Lend Lease competes against Canadian, South African, German, French, Spanish, British, Japanese and American companies.
- Significant cost savings are available over the medium to long term from more collaborative procurement, off site fabrication, supply chain efficiencies, adoption of leading technologies like BIM and an improved focus on innovation across the value chain.

Hunter Expressway, NSW

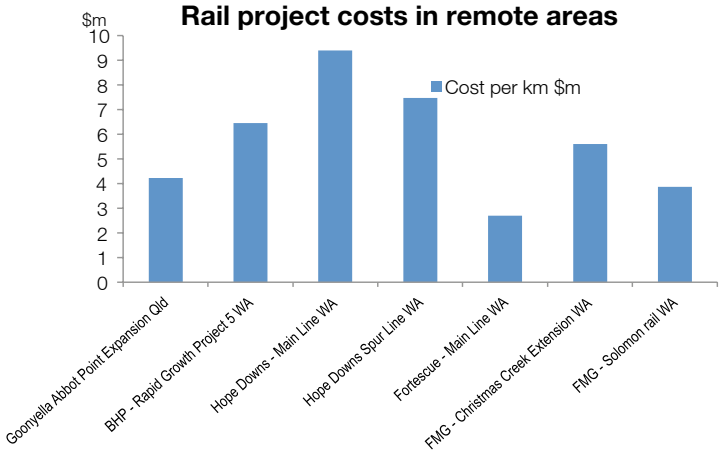
Land Costs

While land costs are a key component of total project costs – especially in heavily populated areas – it is also beneficial to isolate land costs from intermediate and other costs which are able to be influenced by the service provider.

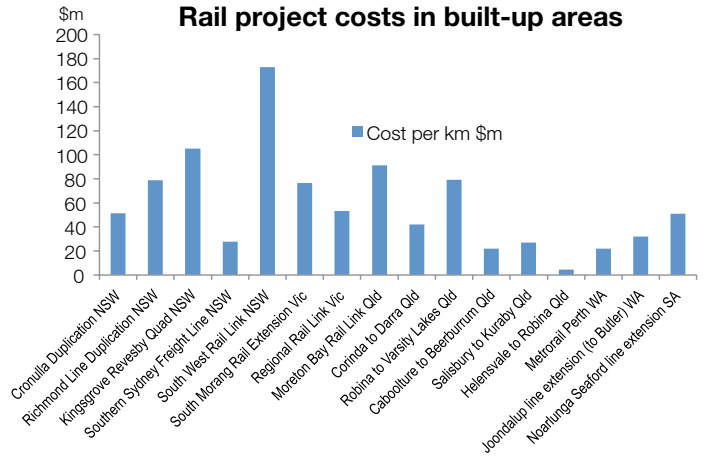
The sector where projects have some level of similarity between heavily populated areas and less populated rural areas – which allows comparison of land costs involved – is rail.

The charts below outline recent significant rail projects in urban and rural areas on a cost per km basis. While most of the urban projects had a level of complexity above the rural projects there remains a considerable cost discrepancy between rail projects in these areas.

A characteristic also common to almost all of the high cost per km urban projects was that project completion was later than budgeted (significantly so in some instances).



Source: Lend Lease Group Research



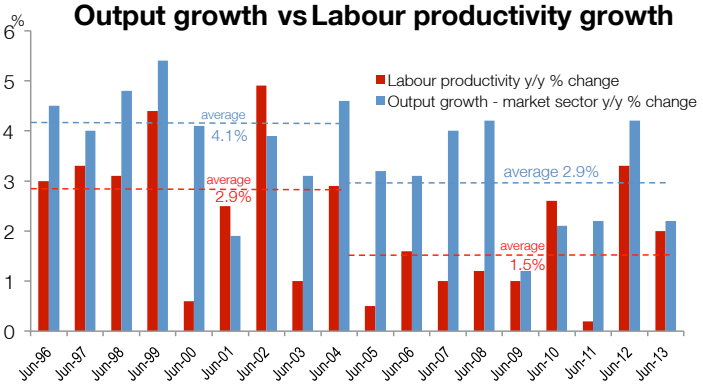
Source: Lend Lease Group Research

The Issues Paper discusses the heightened cost of land acquisition due to inadequate long term planning. This is coupled with a tendency for metropolitan communities to campaign against development resulting in loss of the corridor. This often means sites are permanently sterilised as future acquisition becomes commercially untenable. One possible approach for the Commonwealth government to consider is to create a Strategic Infrastructure Corridor or Site Protection Act which would operate a little like the Biodiversity Protection Act. This would allow the Commonwealth to step in and declare a site to be preserved for future infrastructure development where it was in the national interest to do so.

Labour Productivity and costs

Labour productivity in the construction sector has slowed in line with the overall economy since 2005. However, wages growth in the construction sector has increased over this period and by more than the overall private sector. Competitive pressure from the mining sector seems to have filtered through to higher construction wages.

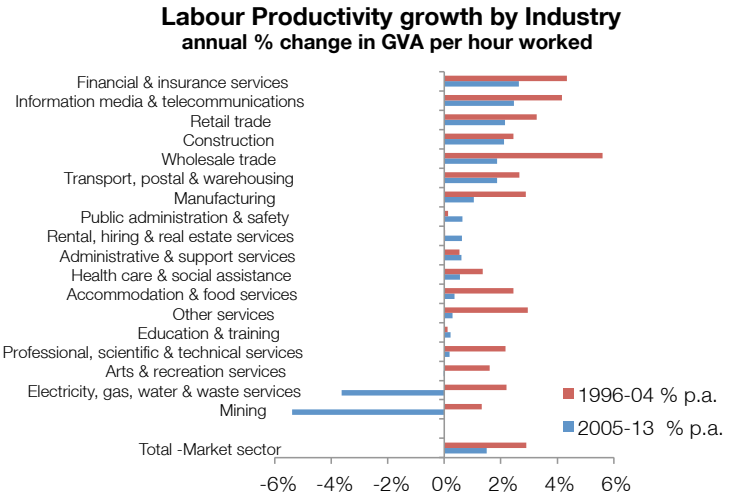
There has also been a slowdown in labour productivity since 2005. Over FY1996-2004 labour productivity averaged 2.9%p.a., slowing to 1.5%p.a. since FY2005. In 2012-2013 labour productivity was close to this rate at 2.0%. Output growth has generally weakened over the period – averaging 4.1%p.a. over FY1996-2004, slowing to 2.9%p.a. over FY2005-2013.



Source: Lend Lease Group Research ABS data

The slowdown in labour productivity has been broad based. Labour productivity growth has slowed in 14 out of 18 industries since 2005.

Labour productivity in the construction industry has slowed from 2.5%p.a. in 1995-2004 to 2.1%p.a. over 2005-2013. Construction productivity has been slightly stronger than for the overall economy but the productivity trend for the sector and the overall productivity trend has been weak.



Source: Lend Lease Group Research ABS data

Over the past 15 years wage costs in the construction industry (private) have increased by 4.0%p.a. vs 3.5%p.a. wages growth across the private sector. This has led to a cumulative 10 percentage point increase in construction labour costs relative to the overall private sector over the period.

In the past year to September 2013 private sector wages growth has dropped by 1ppt to 2.7%. However, construction sector wages growth has slowed less – 0.5ppt to 3.2%.

Although productivity growth has slowed since FY2004, wages growth has been stronger in the construction sector and for the overall economy, Construction sector wages have grown by 4.3%p.a. since FY2004 vs 3.4%p.a. wages growth over FY1998-2004. Private sector wages growth has increased from 3.2%p.a. to 3.7%p.a. over the period. Demand for workers from major mining projects seems to have filtered through to construction wages at the margin, particularly in WA and QLD.

What factors have contributed to the recent productivity growth in the construction industry? Are there impediments that have dampened the potential productivity growth achievable? If so, what are they? How does Australia's productivity growth and levels compare with other countries?

In its August 2013 report of its Project Costs Task Force the Business Council of Australia confirmed the key findings of its 2012 Pipeline or Pipe Dream study, that Australian project costs are higher than they are in other developed countries. The report pointed to drivers of high costs including:

- "problems with **planning, design, scheduling and procurement** - partially caused by overly optimistic project scheduling, scarcity of suitably qualified and experienced project managers and engineers and other key occupations, which at times led to inadequate project execution
- **unpredictable and unnecessarily complex and prolonged government regulatory processes** and decisions - which compounded any pre-existing problems in the construction phase
- the **workplace relations system** which:
  - enables unions to use the agreement negotiating process to ramp up high terms and conditions as project proponents are having to meet deadlines at critical stages in the project start-up and delivery
  - limits the capacity to achieve productivity offsets to balance wage levels
  - enables unions to prevent project proponents from using contractors and other arrangements to manage workforce numbers and deployment through the different stages of a project in line with workforce demands."

The report points to the serious consequences of the declining value of projects 'under consideration' - the next wave of investment - that highlights a looming gap in economic activity. The report finds that…

"The decline in resources investment will directly impact on GDP through a cumulative fall in real private engineering construction spending from $98 billion to $80 billion over the next three years, or $39 billion increasing infrastructure investment will prevent a larger decline in activity, but only if a sufficient set of high quality projects can be planned and funded. Other sources of growth such as housing investment and net exports will need to lift as well."

Lend Lease agrees with the BCA view that government and industry both bear responsibility for taking actions that will constrain the costs of delivering major projects and restore Australia's competitiveness.


Port Botany, Sydney

Lend Lease has been focussed on the productivity challenge and through innovation and collaboration has delivered significant efficiencies in the way major projects have been designed and delivered.

In our view the productivity debate needs to be significantly broadened to examine a range of potential sources of productivity improvement, including the following.

A. A more competitive business environment

B. Private sector investment in public infrastructure

C. Investment in people – skills and workforce development

D. The conduct of industrial relations

E. Improved safety performance

F. Innovation, technology, systems

G. Government regulation, policy and service delivery

H. Procurement innovation

I. Improved commercial environment balancing risk & reward

Regardless of type, size, or location, capital works assets are developed in similar stages. There are opportunities in each stage of the timeline of asset delivery stages to drive efficiencies, foster innovation, and win greater productivity. They begin with the way the need for an asset is identified, and solutions to meet the need formulated. The efficiency with which steps common to all asset development projects are undertaken, well before work commences on site, is a key driver of productivity. Those steps include documentation of required functionality, selection of project team members, design development, and establishment and management of project teams.

The matrix in the following table matches points to the potential opportunities for productivity improvements at each of the stages of the asset delivery timeline. Many are within the control of contractors. Others could be realised with changes in government legislation, regulation, or behaviour as a buyer.

Lend Lease believes that real productivity improvement will come from collaborative and focused actions taken by industry and government. Lend Lease has a clear view of where industry must head if it is to improve on the efficiency with which it delivers capital works assets to its clients, by driving productivity improvements.

We are increasing the amount of modularisation, standardisation, and prefabrication we use on building projects, to make as much of what we do in a more controlled and less risky environment. This drives safety, productivity, and minimises the risks associated with handing over pieces of work to another on orthodox building sites. We are making supply chain agreements to drive efficiencies, and using advanced design technology to optimise designs, minimise rework, and plan for the most efficient possible on-site construction.

Some of the actions suggested in this paper need government to pass new laws or repeal or change existing laws, or to provide strategic leadership for industry and the community. It has a role too as regulator, making sure that regulations achieve the outcomes intended for them.

Government as a buyer or client has an opportunity to demand innovation and better value for money for the community. It should however act responsibly to ensure that the construction industry has a sustainable future, generating employment opportunities, and sufficient profit to invest in new technology and systems, and its ability to compete internationally.

SOURCES OF PRODUCTIVITY IMPROVEMENT ACROSS ASSET DELIVERY STAGES									
SOURCES OF PRODUCTIVITY / **STAGES**	Project Initiation	Design Team Selection	Design Development	Approvals	Construction Team Selection	Construction	Commissioning	Asset in Use	Reuse or Demolition
Competitive business environment	■			■				■	
Private sector investment in public infrastructure	■								
Investment in people – skills and workforce development		■			■	■	■	■	
Industrial Relations					■	■	■		■
Safety performance	■		■		■	■	■		■
Innovation, technology, systems	■	■	■		■	■	■	■	■
Government regulation, policy and service delivery	■		■	■					
Procurement innovation	■	■	■	■	■				
Commercial environment balancing risk & reward	■	■	■		■				

Intermediate costs

There is strong evidence to suggest intermediate costs growth in infrastructure construction has been above that of the broader economy for a number of years. However, it is also worth noting that these cost pressures have been seen across all areas of construction, not just infrastructure.

For example, the non-residential building construction sector has similarly strong exposure to intermediate costs from construction services, professional, scientific and technical services and the manufacturing sector. As mentioned in the terms of reference of the Inquiry, professional, scientific & technical services price rises have generally exceeded CPI by 1 percentage point p.a. over 2003-12.

Additionally, engineering, design & consulting services prices rose more than 4%p.a in the past decade, again faster than growth in the CPI (2.7%p.a.)

A more significant source of potential productivity improvement is found in benchmarking of like assets, processes and materials costs across Lend Lease operations in Australia, the United States, Europe, and the United Kingdom.

Hospitals in Australia can cost 25%[1] more to build than equivalents in Germany and the US. Hospitals in Australia have lower utilisation of key elements (operating theatres for example) than overseas counterparts, who typically operate for 16 hours a day, so requiring fewer theatres than Australian facilities.

Clinicians drive the designs of facilities which maintain, by overseas standards, lazy assets that could work harder. Fewer operating theatres with longer hours could reduce capital costs significantly. Outsourcing management of hospitals to the private sector also has potential to reduce recurrent costs to taxpayers.

Lend Lease is addressing these cost disadvantages in Australia in part through a comprehensive program of supply chain management, building longer term relationships with key suppliers that deliver efficiencies and opportunities for modularisation, and more reliable cash flow for suppliers.

There are examples of Standards and regulations in Australia driving up costs -

- Australian standards for sanitary ware specify a size of toilet pan that is unique, word wide. As a result, there is little competition amongst manufacturers and no incentive for overseas makers to compete here. A toilet pan in Australia typically costs twice that of an equivalent in Europe or the US
- State and Territory WorkCover authorities often require different standards or markings on identical lifts and escalators imported from the US or Europe.
- Recent Lend Lease experience provided another example of this in relation to the cost of reinforcing steel. The cost of importing reinforcing steel to Australia is $1,200 per tonne against $700 in UK for steel sourced from Spain. The freight component for imports to Australia is around $60, but $500-600 is added from import costs and local processing costs. Port charges are amongst the most expensive in the world at $180 per tonne compared to $20 in the UK.

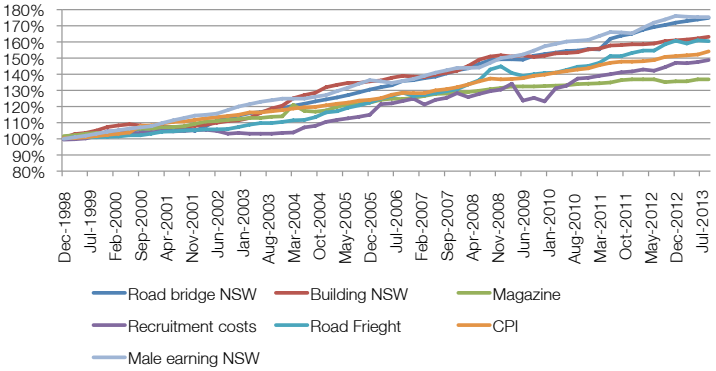
1. Source: Managing Director Capella Capital, John Bowyer, interviewed 19 November 2013.

NSW – Lend Lease Case Study in costs

The approach taken in this section is to use data from Lend Lease road projects in NSW from a number of projects over time as a case study. While there is some variability in the numbers as no two projects can ever be the same, there are some trends that emerge from the analysis.

For a broad overview the following chart shows the ABS indices for NSW roads and Bridges, CPI, total earnings for Males in NSW, Road Freight, magazines and Recruitment.

CPI and Wages versus selected industries



Source: Indices for NSW Roads and Bridges, CPI, Total Earnings for Males in NSW, Road Freight, Magazines and Recruitment, Australian Bureau of Statistics

There is a distinct kick in the data for Roads and Bridges since March 2011 when there was a surge in road construction in NSW. Notably Male wages has outstripped all industries. In addition CPI is lower by about 25% over the period.

What costs have increased the most in the past ten years?

Published data points to moderate price falls for physical capital (in total) across sectors. However, anecdotal evidence suggest that prices for construction and mining equipment have risen, particularly during 2010-12, given strong mining related demand and also reconstruction demand post the Queensland floods.

Highlighting the strong level of demand for construction and mining equipment during the mining boom, in 2011 construction and mining equipment sales rose by 23%, following 7% growth in 2010, according to the Construction and Mining Industry Equipment Group (CMEIG). The market for construction and mining equipment was estimated at $4bn in 2011 according to CMEIG.

A range of core supplier inputs have impacted on the cost of construction – including:

- **Oil = 200%** - this impacts the diesel price and is felt across projects.
- **Asphalt = 110%** - driven by oil pricing, quarry prices, transport pricing.
- **Paving = 100%** - driven by concrete pricing, quarry pricing, demand for higher quality and labour costs.
- **Bridge construction = 73%** - driven by concrete pricing, labour pricing and increase in durability requirements.
- **Internal plant = 70%** - higher pricing ex Europe and US of heavy plant and paving equipment.
- **Topsoil stripping = 68%** - environmental requirements for stockpiling and re-use.
- **Concrete = 63%** - input costs/quarry products.
- **Retaining Walls = 62%**
- **Quarry products = 60%**
- **Wages and Salaries = 74%**

What costs have changed the least in the past ten years?

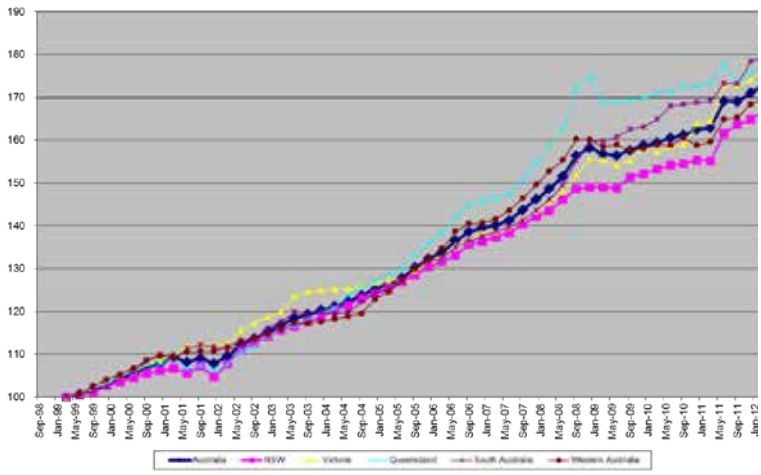
- **RCBC supply = 11%** - market is extremely competitive with the recent demise of several pre-casters in this sector over the last 15 years.
- **Bulk Earthworks = 8%** - equipment got more expensive but it got better as well. D10 pushed 30 loads per hour in 1997 now a D11 pushes 36 loads per hour. That is a 20% gain in output.
- **Reinforcement = 17%** - this is now a global commodity so pricing competition is not confined to Australia. Plus the industry has been taking on technology to improve productivity in order to compete.
- **Pipe supply = 30%** - very competitive industry.
- **Excavators = 35%** - very competitive industry.

Source: Lend Lease Engineering Estimating Database

Location factors

Pricing trends can be global, national, state or regional. Oil, reinforcement, structural steel, plant purchases, cement (increasingly) are global examples. Plant hire, National laws (FBT, LAFHA, Superannuation, Carbon Tax etc.), are national impacts. Wages costs vary state to state, as does planning requirements, and volume of skilled workforce varies. Sydney is a market by itself as is the Hunter Valley, while northern coastal NSW represents a third, southeastern a fourth, Canberra a fifth and southwestern another. Quarries, precast yards, concrete, asphalt are all very local in their pricing.

There is a high impact on costs from over flooding markets with work. This was evident in QLD in 2006 to 2009 and again in WA in 2010 to current.



Source: Producer Price Indexes, Australian Bureau of Statistics

Other Impacts

Indirect costs as a percentage of the total cost for a project today vs. past.

- 1993 - 20%
- 2003 - 33%
- 2013 - 42%

Source: Lend Lease Engineering Estimating Database

These numbers reflect the higher level of indirect costs necessary to support projects today as compared to the past. In addition, the bulk of the projects prior to 2000 were construct only. Very few incorporated design.

Environmental costs have increased by about 120% in the last ten years. This is in response to the public demand for more sensitive approaches to the local community and the environment. Ten years ago a project might have to do 5 consistency reports and 2 review of environmental factors assessments. Now there would be up to approx 100 approvals required from many departments in state, local and national governments.

One of the larger contributors is the increase in staffing numbers on a site. The following percentages are the salaries of staff (non-blue collar) in proportion to the 'design and construction' cost of a project. There are variances in these numbers project to project but the number below is a fair representation of the situation.

- 1993 - 4% typical job - one safety staff; one consultant; three Quality Assurance = **five staff**
- 2003 - 8% typical job - one environmental staff; two safety staff; three Quality Assurance = **six staff**
- 2013 -11% typical job - five environmental staff; six safety staff; two community officers; four QA, one human resource, one Systems Manager, two planners (as start), one Traffic Manager, one Landscape; one Rail Interface Manager = **24 staff**

Source: Lend Lease Engineering Estimating Database

Total costs

ABS data on total engineering construction costs points to price rises broadly in line with the CPI over the past decade, which is not consistent with labour and intermediate cost trends or broader industry commentary of strong cost increases.

The cause of this discrepancy likely relates to the fact that some imported pre-fabricated work for the mining sector is included in official ABS data on mining and broader engineering construction. This pre-fabricated work is being imported because of lower prices, which is dampening reported price rises across the sector, particularly in light of the mining sector's growing share of overall engineering construction in the past 3-5 years.

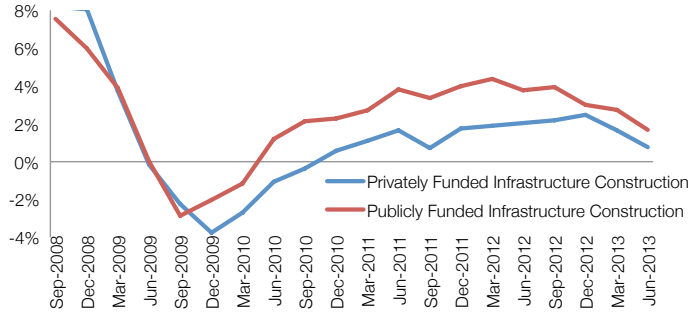
Research commissioned by the BCA indicates that the cost of delivering commercial projects (high rise commercial and residential buildings) and key economic infrastructure in Australia has risen strongly since 2003.

The apparent paradox between aggregate infrastructure construction cost increases remaining near cost increases across the economy in a climate of reported strong cost increases for various infrastructure construction inputs can be explained by analysing sectors of infrastructure construction. Specifically, the chart below shows annual cost growth of privately versus publicly funded engineering construction over the last five years. Privately funded engineering construction is made up of 60% of (direct) mining construction with at least another 10-15% in activity to support mine development.

Mining investment during this period has increasingly relied where possible on pre-fabricated work being undertaken off-shore before being transported to Australia in order to limit costs growth. Meanwhile, publicly funded engineering construction focussed almost exclusively on civil infrastructure, where such opportunities to limit costs were not possible.

Between December 2009 and December 2012, the average margin by which annual costs growth each quarter in publicly funded engineering construction exceeded that of its private counterpart was 1.9%. It has been above private costs growth for the last 15 quarters. If privately funded engineering construction costs annually grew at a rate closer to that of the previous five years – 6.3%p.a. and a period of limited imported pre-fabricated work - total infrastructure costs growth would be growing at a rate much more representative of that seen across various construction inputs.

Infrastructure Construction Costs Growth
(Private vs. Public, Year-on-Year Growth)



Source: Lend Lease Group Research ABS data

International comparisons

While numerous factors make international comparisons of costs for infrastructure projects a difficult task, comparisons undertaken by the BCA on resources investment between Australia and the US Gulf Coast (noted as "a region commonly used by industry cost estimators as the resources sector industry benchmark") concluded Australian resource investment costs were 38-50% higher than those seen on the US Gulf Coast.

Additionally, Australian commercial construction costs were also seen higher than in the UK and parts of the US.

The management of the different forms of construction contract used by clients is a significant cost to contractors, consultants, and clients of the industry. The industry has argued for many years for the use and benefits of standard form contracts as a means of reducing the costs of contract administration. The identified benefits have not been widely accepted or adopted in Australia.

In Europe however there is widespread adoption of the standard conditions of contract issued by the International Federation of Consulting Engineers, known by its French acronym FIDIC. The FIDIC forms are the most widely used forms of contract internationally, including by the World Bank for its projects. This approach to FIDIC contracts should be adopted as part of the internationalisation of our industry and also minimising the cost of having to manage competing forms of contract?

The existing commitment of governments though the COAG process and the work of the National Occupational Licensing Authority (NOLA) to harmonise licensing and registration nationally is welcome. We share concerns of many in the industry, that the push to streamline may have unintended consequences, including watering down the current requirements for basic management learning. Management skills are an important of the kit of all firms, to ensure that they understand the risks of contracting and are able to manage them.

Ipswich Motorway, Queensland

WORKFORCE ISSUES

What are different unions' coverage across major public infrastructure projects? How does this vary across jurisdictions and project types?

As identified in the Issues Paper, the Construction Forestry Mining Energy Union (CFMEU) and Australian Workers Union (AWU) are the major unions in the building and construction industry.

The CFMEU has traditional sole coverage of the general building and construction industry (i.e. minimal or nil AWU presence).

Whilst the AWU arguably has traditional coverage over the majority of unskilled and trades people in the civil construction industry, the CFMEU also has a significant presence in this industry (generally through higher levels of employee membership, and via its coverage of subcontractor trades such as cranage and plant operators that are utilised on civil construction projects).

Other unions such as the Communications Electrical Plumbing Union (CEPU) and Electrical Trades Union (ETU) and the Australian Manufacturing Workers Union (AMWU) also have coverage across construction projects, for example in respect of mechanical and electrical works on these projects. The CFMEU and AWU's respective presence on civil construction projects vary across jurisdictions. For example:

- In NSW, the AWU has a relatively strong enterprise agreement negotiation and on-site presence (with the CFMEU).
- In VIC and QLD, the AWU has less of a presence than the CFMEU.
- On some major infrastructure projects, CFMEU or AWU coverage may also be determined by framework enterprise agreements that have been entered into by contractors' clients for those projects. This is particularly relevant to major EPC lead infrastructure projects.

What is 'best practice' in the bargaining process between employers and employees, and are there 'win-win' options that have not been fully exploited? How can these opportunities be exploited?

The bargaining process between employers and employees across public infrastructure projects arguably fails to meet the objectives of the Fair Work Act 2009 (Cth) (FW Act) "to provide a simple, flexible and fair framework that enables collective bargaining in good faith, particularly at the enterprise level, for enterprise agreements that deliver productivity benefits".

Enterprise agreement negotiations under the current system tend to be lengthy, adversarial and protracted processes, potentially for a number of reasons:

- The prescriptive nature of the 'good faith bargaining' requirements;
- The inability to enter into a greenfields agreement without union/s consent or approval;
- The overly technical & inflexible procedural requirements for having enterprise agreements approved;
- Managing the expectations of competing unions in the bargaining process;
- The limited role employees themselves play in the bargaining process; and
- The role of regulators prohibiting certain content being included in enterprise agreements.

A 'best practice' model for bargaining to focus on 'win-win' options may include:

- A greater focus on direct employer-employee engagement in this process, a more flexible approach to procedural requirements, and greater creativity around the content of enterprise agreements (e.g. initiatives that genuinely improve relationships between employers, employees and unions in the workplace, such as regular site inspections and consultation meetings as per the 'Hunter model' of agreements in NSW); and,
- Less of a focus on 'pattern bargaining' between unions and employers, and inflexible 'black letter' approaches from regulators on the content of enterprise agreements.

Also of particular concern are recent decisions of the Fair Work Commission which suggest that enterprise agreements cannot include 'project carve out' clauses – whereby existing agreement coverage can be changed by entering into another agreement specific to a particular project. This approach to agreement making has been a common and long standing approach in the building and construction industry, and allows negotiation of terms tailored specifically to a particular enterprise or project.

What is the quality of training for negotiations (for both employers and employee representatives)?

Overall, the quality of bargaining could be improved through improved training for negotiators, as well as a focus on improving relationships between the parties and more transparency regarding the commercial context which underpins the bargaining.

The dominance of 'pattern bargaining' as the norm in negotiations however, by its nature, de-skills negotiators.

There should be a shift away from this mentality to creatively look at enterprise agreement terms that genuinely improve workplace relationships, whilst delivering real efficiencies and productivity gains for employers. An opportunity to achieve this is being missed in the current bargaining framework.

To what extent have bargaining arrangements (or their breakdown) between employees (and their nominated representatives) and management on projects

- Reduced innovation and flexibility
- Increased wages above levels of comparable employees in other sectors
- Resulted in inefficient input choices
- Led to project delay, and lower labour and capital utilisation
- Led to industrial disputes, 'work-to-rules', go-slows, bans (such as overtime), and employer 'lock outs'?

Where bargaining has resulted in formation of agreements, it has in many cases been a product of 'pattern bargaining', resulting in wage rates and increases above levels comparable in other sectors, with minimal flexibility and productivity trade-offs in return.

Where bargaining has been unsuccessful, it has often resulted in significant industrial disputation in the industry.

As outlined above, the relative immaturity of bargaining relationships and commodification of the process acts to freeze the capacity to innovate and create value. While there are many provisions in Enterprise Agreements which are standardized from project to project, working arrangements and hours of work, for example, need to reflect the circumstances of particular projects rather than made to fit an industry sector template. This outcome essentially reflects union anxiety that project departures from standard arrangements will undermine 'industry standards'.

This sees a relatively small number of sub-optimal bargaining outcomes constraining the bulk of the industry from achieving well paying, flexible and productive bargaining outcomes supporting efficient project delivery for our clients.

Where bargaining breaks down, the consequences of unlawful behavior needs further regulation. A strong industry regulator as proposed by the Federal Government with the reestablishment of the Australian Building Construction Commission (ABCC) is needed to deal with unlawful conduct associated with such disputation.

What has been the associated impact on costs, and how do they compare with other factors creating cost pressures? Have such costs changed over time, and if so, why?

The industry's relatively immature bargaining skills reflects a history of boom and bust (and the changes this brings to bargaining power), a history of centralised bargaining processes – whether that was around industry awards or the current enterprise agreement process and the commercial circumstances for projects.

The costs of the industry's poor bargaining record is shared between contractors, construction workers and the industry's clients. The examination of labour productivity and cost above, while useful, does not provide an accurate measure of this outcome. While an examination of industrial disputes unarguably shows an increase in disputation in recent years, the costs of an immature and largely inflexible system lie in lost opportunity, reduced demand for projects and an increased risk premium, particularly for larger projects, many of which are for public clients.

How do work practice and industrial relations affect the costs of different types of construction?

Variations in work practices and industrial relations (IR) outcomes reflect historically different awards, union coverage, as well as varying delivery and construction approaches.

Simplistically, civil engineering (and the resources sector) construction activity has largely had improved work practice and IR outcomes due to:

- The presence of well informed repeat clients (both public and private sector) who have established and well understood approaches to managing workplace outcomes;
- A relatively small number of larger contractors, with established and well understood approaches to managing workplace outcomes;
- Relatively high percentage of the work being self performed by employees who tend to be employed repeatedly by the larger contractors;
- Longer term subcontractor relationships (generally beyond a single project engagement);
- Union relationships which are constructive and longer term in nature.

As outlined below in this submission, current Fair Work Act provisions relating to project agreements threaten to undermine the historical success of this sector in managing workplace relations.

In contrast, in the commercial building sector:

- The client group is highly fragmented and more transactional in their approach to project delivery;
- Head contractors employ a small workforce with the bulk of labour being employed by subcontractors, many on a project only basis;
- Due to the 2 points above, the commercial environment places much of the risk for IR disruption with the head contractor (with time (program) a critical sensitivity) but control of the risk increasingly not in the head contractors hands;
- Immature bargaining relationships mitigate against effective and timely resolution of issues.

What have been the primary causes of industrial unrest?

In addition to the points made above, industrial unrest has appeared to have arisen in the following circumstances:

- Immature bargaining skills and relatively poor relationships between the bargaining parties;
- Unsuccessful bargaining negotiations with unions, which result in the employer entering into an enterprise agreement with its employees without union endorsement;
- 'Unreasonable' union claims – in particular claims for head contractors to make commitments in relation to subcontractor enterprise agreements; engagement of non-working shop stewards on projects; engagement of particular subcontractors and individuals on projects; and
- Ineffective dispute resolution processes.

How quickly have matters been resolved, and by what mechanism (consensus between parties, actions suspended by the Fair Work Commission, intervention by the former Australian Building and Construction Commission, or in cases of unprotected actions, through civil litigation)?

All of the above. Depending on the nature of the dispute/industrial action, some have been resolved by agreement, whilst others that haven't been resolved have been the subject of Fair Work Commission orders, investigations and prosecutions by the ABCC (now FWBC), and via civil litigation in Federal and State Courts.

Some particular comments about these mechanisms:

- Fair Work Commission intervention: Whilst this avenue has been an efficient mechanism to obtain orders that employees return to work, they have in some cases been deficient in practice – because unions and employees have not abided by them, and/or the Fair Work Commission has set an inappropriately high standard of proof to establish union involvement in employees' actions;
- ABCC/FWBC: Prior to the abolition of the ABCC, it was an active investigator and prosecutor of unlawful conduct in the industry. However, when this agency became the FWBC, its presence in this area declined significantly. A well-resourced and well-funded regulator operating in the same manner as the former ABCC is needed to counter unlawful conduct in the industry; and,
- Civil litigation: Whilst this has also been an avenue taken by contractors to try and counter unlawful conduct and try to resolve matters, it is a costly and time consuming exercise. Challenges with this approach also arise with the rise of the 'community protest', making it difficult to resolve with/attribute liability to the players in the underlying industrial dispute.

More broadly, to what extent does the market structure of the construction industry — and in particular, the relatively small number of prime contractors — affect employer/employee bargaining arrangements, and with what effects on costs?

On a number of projects (particularly general building and construction projects), the prime contractor engages few direct enterprise agreement employees, with the majority of the work performed by subcontractors and its employees under their own bargaining arrangements. This means that the prime contractor usually has limited input into the employer/employee bargaining arrangements on these projects. Labour costs on these projects often vary between prime contractors and subcontractors and largely reflect each enterprises commercial circumstance.

In contrast, on civil construction projects, the 'self-perform' model is more prevalent, whereby the prime contractor directly engages a larger number of the enterprise agreement employees on that project. This means that the prime contractor has a greater role in determining the employer/employee bargaining arrangements on such projects. This greater role extends to management of workplace issues and disputes and generally results in a more predictable and less disruptive environment.

To what extent has there been unprotected industrial action (actions not covered by a Fair Work Commission protected action ballot), or the threat of such actions?

While there have been several recent high profile instances of unprotected industrial action and associated unlawful conduct (e.g. the Grocon dispute in Melbourne, the nine-week Children's Hospital dispute in Brisbane, and the current actions in Brisbane during November/December 2013 across several John Holland sites), Lend Lease does not have specific data. As indicated above, historically, unlawful industrial action has tended to occur more in the commercial building sector than in civil engineering.

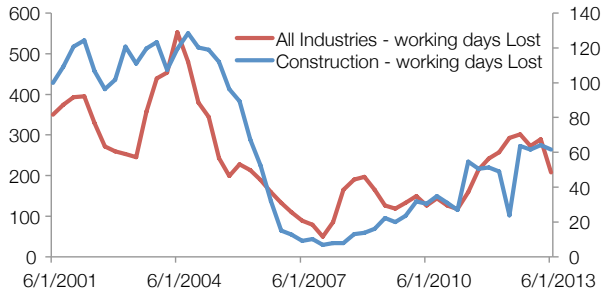
Is there any evidence that the abolition of the Australian Building and Construction Commission affected workplace outcomes in the construction of major infrastructure?

Unfortunately industrial disputation has increased in the industry since the demise of the Australian Building and Construction Commission (ABCC). Major infrastructure projects have been a particular target for unlawful industrial action and these cases have been well documented. Lend Lease projects that were exposed to unlawful industrial action or unlawful behaviour include Barangaroo in Sydney, The Queensland Children's Hospital, Williams Landing project in Victoria, the Adelaide Oval redevelopment, and the University of Queensland oral health site.

The level of industrial disputation in the construction industry has increased every year since 2009 when the Fair Work Act was implemented. Data showing this is included in the Appendix to this paper?

To what extent have there been union rivalries and demarcation issues, and what have been the impacts?

Working days lost- Construction vs All Industries annual total



Source: Lend Lease Group Research ABS data

In Lend Lease experience this hasn't been a significant issue in recent times.

Is the regulatory process and framework around greenfields agreements appropriate?

Under the current system, union/s are able to negotiate superior terms and conditions in greenfields agreements, given that such agreements can't be approved by the Fair Work Commission without union/s endorsement.

Contractors then face significant pressure to accede to such union demands, given that their clients are reluctant to accept them commencing work on their projects without an agreement already in place (i.e. clients are unwilling to accept the risk of protected industrial action where contractors commence work on a project, engage employees, and then negotiate a brownfields agreement with those employees).

To address this, the current system needs to be amended to allow greenfields agreement to be approved by the Fair Work Commission after a prescribed period of negotiation impasse between the employer and the union/s, or the reintroduction of the ability to make employer greenfields agreements.

What have the roles been of governments and employer organisations, and any effects on the outcomes in the relevant part of the construction industry?

Federal and State governments have played an increasing role in the management of workplace relations in the construction industry, particularly through the introduction of the ABCC/ FWBC, and various National and State Codes of Practice to regulate behavior in the industry.

The re-introduction of the ABCC (with its previous powers analogous to the 2005 BCII Act), and the National Code Guidelines similar to the 2006 version, is welcomed to counter unlawful conduct in the industry. However, consideration needs to be given to the various National and State Codes we have in place, and harmonising these into a single uniform Code. Compliance with these various (and in many respects) competing Codes increases compliance burden and costs for contractors.

Employer organisations (egg, the AiG, the MBA) have been effective in representing the industry's position on workplace relations issues (egg, the reintroduction of the ABCC, necessary changes to the Fair Work Act for the industry).

Peak union bodies (e.g. Unions NSW) have also been an effective vehicle in managing bargaining processes where multiple unions and potential demarcation issues involved direct employee engagement in bargaining.

Skills shortages and pressure

Lend Lease sees the development of its people a first order priority. We strive to be an employer of choice in what can be a tough and demanding industry. We are committed to diversity, and to engaging and encouraging indigenous workers. We maintain a comprehensive internal learning program.

As with all employers in the construction industry we are interested in the work of the Commonwealth Government's Construction and Property Services Industry Skills Council (CPSISC) and the equivalent body for civil and mining work, the Skills DMC. Lend Lease is concerned however that the span of disciplines covered by the CPSISC does not permit sufficient focus on the core trade and professional skills needs of the non-residential building industry. It may be better to have an integrated building and civil body, leaving the other disciplines in the current CPSISC to another body.

Currently the debate on trade and sub-trade contracting skill needs and the needs for professional and technical skills are held separately rather than being integrated and a re-think is needed on the structures we currently have in place to accommodate this debate. There is a perception that the focus is on the teaching/learning institutes rather than the industry's needs.

Competency standards need however to maintain their potency. The pressure to increase the availability of a new worker in times of high demand may cause dilution of standards by which

capability is measured. This dilution must be resisted. Existing competency standards need to be strengthened to "future proof" registration and licensing by mandating ongoing professional development.

Lend Lease shares wider industry and indeed community concerns at the number of apprentices who fail to complete their time and become tradespeople. The industry has over many years responded to the uncertainties of a "follow the job" industry structure, by setting up and managing group training schemes. However, all group schemes report significant issues of retention and completion rates of apprentices, particularly as the average age of workers rises. There are significant costs of delivering learning to new entrants who don't complete entry level industry education. The increasing age profile of workers in the industry adds to these concerns.

Lend Lease is concerned too that publicly funded vocational training appears to be drying up. In particular, the TAFE system has been the industry's main source of site leadership skills through training of site managers, senior superintendents, and clerks of works, who are key to efficient delivery. There are increasingly fewer options available for the industry to access for development of supervisory leadership skills.

As a buyer, the Commonwealth and State governments, could encourage the hiring and training of more apprentices, as well as indigenous training and employment by giving preference to contractors who are prepared to work with local community stakeholders on relevant schemes.

The project based structure of the industry militates against organisational learning. Different firms work for a short time on a project with other firms; with every asset they deliver effectively a prototype. The potential process and productivity improvements achieved on one project are often not captured and made available to those who worked on that project, for use on later projects.

Governments as buyers could address this by requiring post occupancy evaluations that sought to identify and document the drivers of efficiency and productivity for use on other projects.

Mt Whaleback Mine, Western Australia

Gateway Bridge, Brisbane

MARKET STRUCTURE AND BEHAVIOUR

The right to construct capital works assets is won in an extremely demanding competitive environment, against Australia's leading contractors and a field of international companies. To compete for these projects Lend Lease has pre-qualified with all of Australia's leading public sector clients. This verifies our financial and technical capability across a range of disciplines including our ability to manage industrial relations, health and safety and environmental challenges.

We can only succeed if we have the best people and the best systems and an external regulatory environment which supports our endeavours.

In the engineering sector the vast majority of the companies we compete against in Australia are international companies – from nations including Canada, South Africa, Germany, France, Spain, the United Kingdom, Japan and the United States. This ensures that Australian engineering projects constantly benefit from the very best international experience available.

In the building sector our clients tend to be domestic property firms, with extensive experience of commercial, residential, industrial and property markets. Our competitors in these markets tend to be domestic construction companies (albeit many are foreign owned).

There are few barriers to entry in Australia for international contractors – beyond those set by clients – and this drives an extremely competitive market for construction services. To succeed in this environment Lend Lease has to demonstrate the best offering.

Lend Lease Engineering competes in Australia, against most of the top 20 international contractors ranked in Engineering News Record's Top 400 operators. It competes against a range of property firms and major and increasingly, second tier, constructors in Australia for the commercial, industrial, retail and residential building work that is the dominant part of its Building business.

Lend Lease is not aware of any unique Australian barriers to overseas contractors operating here. The barriers to entry that are present here, and overseas, often are those imposed by clients including requirements for capability, local balance sheet, cultural and commercial compatibility, and capacity to meet local prequalification criteria.

Does whether the client is public or privately owned have implications for the cost of the project? If so, why, and what is the evidence for this? If not, do other client characteristics affect the cost of the project?

In Australia and in overseas markets Lend Lease has extensive experience working with both publicly and privately owned clients.

Private sector clients tend to be very cost-conscious and perform considerable expert specification and subsequent due diligence to ensure the project achieves an appropriate profit.

In the public sector (outside some corporatised entities) the profit driver is absent. This can have negative implications for the public sector's selection of projects and the specification of selected projects. Selecting the wrong project and/or over-specifying a project has opportunity costs for the public purse regardless of the method of procurement.

More recently, some public agencies such as Infrastructure Australia have introduced cost-benefit analysis for major projects in an attempt to improve project prioritisation.

Why have there not been more international firms entering the market? Do local firms, particularly the big two suppliers, have an advantage? If so, what is the nature of this advantage?

Large international construction and engineering firms have been active in the Australian market for many years. By way of example, in an announcement regarding the $1.6 billion CBD and South East Light Rail project NSW Transport Minister Gladys Berejiklian recently stated:

"Representatives from countries including Australia, France, Italy, Spain, Japan, Singapore and China attended and were invited to work with the NSW Government to deliver the key infrastructure project." (22 October 2013)

Lend Lease is currently working with both Spanish and French contractors who bring international capacity and expertise to bear on large public infrastructure projects. Lend Lease supports foreign entrants to the Australian market to improve domestic capacity and improve client outcomes.

Hunter Expressway, NSW

Procurement and Project Management

Opportunities to innovate with the use of materials, equipment, contracting arrangements, supply agreements, and more, are a prime source of potential productivity improvements across all stages of the asset delivery timeline. Lend Lease is investing heavily in technology including formwork systems, design software and processes, and in developing strategic supply chain agreements.

The demands of delivering three large towers as part of the Barangaroo project would have stretched the capacity of structure contractors not just in Sydney but across the country. Lend Lease has designed and then procured formwork systems for the project, based on the best we could find in the world, and is now training its own workforce to effectively and productively use it.

Lend Lease in Australia has begun developing supply chain agreements in Australia based in part on our experience in Europe and the UK.

Lend Lease is investing heavily in Building Information Modelling (BIM) to drive more efficient design, site management, construction methods, and asset management. It is also a key to driving greater productivity from supply chain arrangements, offering opportunities to standardise and modularise components. Collaboration amongst members of project teams in the construction industry is a good thing. It is a vital input to efficiency and productivity, reduction in wasted effort, and minimisation of disputes. BIM will produce best results (design to achieve project sponsors' objectives, minimal changes, optimal buildability, designed-in operational efficiency) when all who can contribute are involved in designing and planning for the work they will perform for the project.

That requires

- integrating project teams to create, sustain and encourage the collaborative behaviour required of all members of project teams if optimal project outcomes are to be achieved; and
- the powerful enabling tools associated with BIM that optimise the process of planning, designing, constructing and operating assets.

Lend Lease has demonstrated significant improvements in time, cost and quality outcomes. The full benefits of BIM will be realised when a delivery methodology is in place that facilitates the integration of contractors, trade contractors and suppliers in the design process. For the US construction industry BIM has become a fact of everyday life. McGraw Hill Construction reported in October 2012 the highlights of its new research showing

"The rapid advance of Building Information Modelling (BIM) usage by architects, engineers, contractors and owners in North America. Comparing results from its similar research in 2007 and 2009, McGraw-Hill Construction finds:

- The percentage of companies using BIM jumped from 17% in 2007, to 49% in 2009, to 71% in 2012;
- For the first time ever, more contractors (74%) are using BIM than architects (70%);
- All users report increased business benefits from BIM including better profits, more accurate documentation, less rework, reduced project duration, fewer claims and the ability to offer new services;
- Almost 40% of BIM users are heavily committed to it, doing over 60% of their work in BIM. This group has surged by 44% since 2009;
- As a sign of its increasing acceptance and maturity, almost half (49%) of BIM users have five or more years' experience using it.

The UK Government has mandated the use of supply chains on its projects, and is facilitating the industry-wide adoption of BIM. The Singapore Government has also mandated BIM, and gone further by subsidising the cost of the software and training required to drive the software.

The Australian construction industry has, presently, a fragmented approach to BIM, and to the use of supply chains. There are significant benefits to be had for clients of the industry from the adoption and widespread use of both tools.

Government as buyer in Australia could spur on the productivity gains to be had from both, by normalising the market by mandating the use of BIM, and requiring contractors to nominate the members of supply chains they will use, on all government projects.

The more challenging and potentially more rewarding, opportunity lies in government challenging the orthodox approaches to ensuring probity and value requirements are met, by finding innovative ways to appoint project teams before design solutions have been finalised.

Changes to Commonwealth Research and Development (R&D) legislation in 2010 have made it harder to invest in innovation. To assist and promote innovation, particularly in our industry grounded in traditional methods, contractors need incentives to ask their workforce to turn things around and do things differently. For example, under the previous R&D regime the technology that enabled early Green Star buildings entitled

them to claim some R&D benefits. This made it easier and more attractive to secure investment in environmental and productivity innovations. We would urge the Government to re-visit and reinstate the previous R&D regime.

Government has roles as legislator and buyer in the procurement area. Lend Lease understands that procurement frameworks need to be transparent and satisfy probity and value for money requirements. Within those frameworks government agencies in Australia (and overseas) have been prepared to adopt innovative procurement strategies, including alliances, two stage managing contractor, and early contractor involvement appointments.

Ideally, government procurement policy should encourage collaborative working. Productivity gains will come from greater attention being paid to collaborative working, rather than the traditional trade and professional discipline "silos". Silos inhibit collaboration and the ability of all parts of the industry to contribute to design, buildability, and generation of value for money service deliverys from capital works assets.

The more challenging and potentially more rewarding, opportunity lies in government challenging the orthodox approaches to ensuring probity and value requirements are met, by finding innovative ways to appoint project teams before design solutions have been finalised. The benefits of early appointment coupled with use of BIM to develop design solutions to meet needs, are significant. The orthodox approach of appointing contractors only after designs are sufficiently developed to allow for tendering, denies buyers opportunities for productivity gains, both in capital and recurrent cost.

Lend Lease suggests that legislative frameworks governing procurement be opened up to encourage the selection of members of project teams before the scope of design is settled, to facilitate those opportunities. Further, we suggest that existing policies, laws, regulations and procedures be re-visited to allow expansion of alternative approaches to selection of service providers (rather than competitive selection), including negotiation. The use of project team integration at an early stage of the design process coupled with the use of Building Information Modelling is delivering significant benefits to clients in the US.

Government should encourage innovation and productivity gains by demanding innovative practices on its projects. Done properly demand side innovation will not inhibit competition or transparency. It can lift standards that flow across the public sector and to the private sector. These innovations include requiring the use of integrated project teams, the use of BIM, and mandating the use of supply chains by head contractors.

Providing officials with appropriate procurement and project management skills would help. We suggest that the Commonwealth take the lead by setting up a collaborative program with a university or universities, around project management, to encourage industry and government people to learn together.

The lack of and general quality of information provided by Principals at Tender goes directly to how Contractors assess and price risk. Principals must do more to provide accurate and robust information for Contractors to assess at tender. The results of not doing so are that the Contractor is forced to undertake its own investigations (which are not always possible); inconvenient to Principals and with four tenders pricing the works the costs to the market are four times that of the Principal undertaking the works.

Major Project Risks

Contractors whether they be in infrastructure or major building projects, when bidding on projects and when delivering projects can encounter a range of risks that can include such diverse items as:

- Latent conditions
- Design risk
- Force Majeure
- Consequential loss
- Time pressures
- Liquidated damages
- Cost overruns for either materials or labour
- Project sequencing and Program accountability
- Processing risk and
- Fit for Purpose and
- Others

The level of uncertainty a contractor faces when bidding on projects becomes a function of:

- The contractors understanding of how the above items impact the project
- How much experience the contractor has when delivering similar projects and
- The level of information available to a contractor when assessing a project and
- The amount of time afforded to the contractor to undertake due diligence

Assuming comparable experience and available information to all contractors being similar one could assume the key differentiators on price and time would only be determined by the use of unique delivery systems or risk appetite to accept a lower margin to maintain momentum volume and momentum for a contractor.

Experienced contractors will price risk. The extent that the risk can be measured in quantum terms and the level of confidence as whether the risk is likely to occur or not will assist a contactor in making a more accurate assessment.

The Lend Lease approach to risk is to **"Identify the risk, analyse it and then evaluate whether the risk can be treated, modified, mitigated or priced"**. This process is repeated over and over on large project bids with communication and consultation taking place between experienced team members to fully understand and optimise the decision making.

If however a contactor identifies a risk, assesses it as a high dollar impact with a low chance to control the risk or mitigate the position the likelihood increases for a client to receive a wider spread of pricing on a project.

To remedy this position it is preferred that risks lie where they can best be managed and assessed whether this is with the client themselves, the head contactor or in turn the various subcontractors working on the project.

Additionally the lack of and general quality of information provided by Principals at Tender goes directly to how Contractors assess and price risk. Principals must do more to provide accurate and robust information for Contractors to assess at tender. The results of not doing so are that the

Contractor is forced to undertake its own investigations (which are not always possible); inconvenient to Principals and with four tenders pricing the works the costs to the market are four times that of the Principal undertaking the works.

Excessive tender deliverables sought within tight timeframe and then post tender further/additional information and clarifications requested that requires extensive resource commitment. The cost imposition to the industry is considerable given that all tenderers are taken on the journey over a prolonged period and that in a field of three tenders, two sets of costs are sunk. The only options are to short list less/reduce tender deliverables or reimburse tender costs if this is policy for government projects.

Commercial – Most contracts are based on Australian Standards but huge costs are spent on external lawyers by the client effectively re-writing the conditions, and then by each tender in terms of internal counsel / external advice in reviewing and negotiating.

With particular regard to some Government controls the Client is requiring a Bid Bond to be submitted prior to releasing RFP documents and the Principal at that time then requiring a conforming tender as a condition precedent to bid process obligations which places the bid bond at risk. This is done without supplying the terms and conditions which we required to be conformed to. The impact on tenders and the adoption of a best for project approach is diminished by such conduct of the Principal.

How do Australian procurement practices compare to equivalent overseas arrangements and private sector processes?

There are a lot of similarities in the overall procurement process with those overseas however the biggest difference impacting the outcomes is the size (and consistency) of the pipeline in Australia e.g. comparing to somewhere like the UK. Key benefits of this model are:

- a national programmes of works controlled centrally;
- one client team setting consistent standards and process with a transparent (and typically large) pipeline;
- the central team learns from one project to the next and modifies the process to meet best practice;
- competitors build capability, supply chains and innovation into their business on the back of certainty to a significant pipeline to access – so over time solutions became relatively efficient.

In Australia, we have smaller pipelines, broken up by state authorities and by sector with slightly different processes that have one or two projects each – response is each competitor with bespoke solutions, involved in repetitive pre-qual, EOI and bidding with limited ability to build capability and supply chain solutions

To what extent does the current procurement design favour market incumbents and exclude potential market entrants?

This can go either way – i.e. given comments above, because the procurement is relatively inconsistent, its less attractive for new entrants. However because of the inconsistency it's difficult for the incumbents to build supply chains / innovative solutions – if there were consistent and deep pipelines of large infrastructure projects there may well be more international players entering the Australian market.

To what extent do Commonwealth and state local procurement policies and practices result in higher project development costs? Are these costs justified by increased competition in the supply chain or other possible benefits?

Government procurement processes have a number of good attributes in that they are typically well defined in how they will run, well defined in the deliverables at each stage and how a tender will be evaluated. The competitive nature of the process will probably give the lowest cost for the defined solution; however it's questionable whether this solution is optimal.

The rigidity (and well defined nature) of the process requires sufficient detail to be developed by the client so that suppliers are always meeting the scope of the project. This stifles innovation and assumes that the client has developed an optimal starting point in terms of project brief and design – there is sometimes industry input prior to competition, but this is unlikely to drive innovation but it will drive competitors trying to influence the starting point to get them into a stronger position. Once the competitive process has started, there is some project based innovation and optimisation within the bounds of the solution – a real balancing act for Government clients over how much detail versus how much performance specification.

Do the government teams responsible for procuring major projects have the correct skill mix? If not, what measures are most likely to ameliorate these deficiencies?

Innovation needs to be resourced, with the right people and time and budget. However since the late 1980s there has been a trend in governments across Australia moving away from the once traditional role of public works agencies acting as internal project managers for all capital works projects within each jurisdiction. One consequence of this has been the reduction of project management skills within government, (with the notable exception of Defence). In turn that has substantially reduced government internal skills sufficient to manage the scoping, selection and management of project teams to deliver assets.

That lack of capacity engenders a lack of confidence amongst officials charged with managing the delivery of capital works asset. Innovative proposals are unlikely to be considered when, as is often the case, there are risks associated with them.

This lack of internal skills and confidence is found in the common practice of government client briefs and specifications requiring the use of "world's best" standards, often without being clear as to what such a standard involves, and regardless of whether a particularly high standard is indeed required to deliver the functional outcome. Scoping of requirements needs improvement, and 'gold plating' infrastructure adds to project costs.

Providing officials with appropriate procurement and project management skills would help. We suggest that the Commonwealth take the lead by setting up a collaborative program with a university or universities, around project management, to encourage industry and government people to learn together.

Other Cost Pressures

Are current regulatory requirements appropriate for businesses tendering for public infrastructure projects?

Regulations differ markedly from State to State. While acknowledging the need for due process, appropriate environmental approvals and structured community consultation, the planning and tendering of major public infrastructure projects is more prolonged and costly compared with private sector projects or similar projects overseas. It is often the case that regulatory requirements take longer than the actual construction of major public infrastructure projects. The costs involved for contracting entities is increased by different regulations amongst the states, including environmental and planning approvals and conditions, public financing models, unrealistic risk transfer in contracts and unreasonable contract conditions.

To what extent are major infrastructure projects coordinated in terms of location and timing? Should there be more such coordinating, and if so, how?

Lend Lease is not aware of any major project coordination between the States or between the States and the Commonwealth.

The Commission cites government initiatives from Infrastructure Australia such as the Public Private Partnership Pipeline and the National Priority List as steps toward better planning and sequencing of major projects. However, without firm timing and funding commitments these documents provide minimal guidance.

Lend Lease recommends there should be more coordination of major projects and better certainty of the major project pipeline. Perhaps a combination of work by Infrastructure Australia and COAG could be used to achieve this.

At present state and commonwealth governments generally embark upon processes that are designed to deliver one specific piece of infrastructure. The processes are bespoke to that project. This approach may not, however, produce the best overall economic solution - compared to a more flexible approach that allowed the private sector to look more creatively towards the creation and capture of value. For example, if new infrastructure was to be necessary to open up a whole new residential precinct (e.g. a bridge) the provision of surplus crown land to develop by the infrastructure developer might produce a viable funding solution and drive a different financing strategy. Equally it might be possible that an individual company or a consortium may be able to deliver multiple government infrastructure goals in a highly efficient manner. One way of achieving this, while allowing for competitive tension and meeting government probity requirements could be for a government to announce a menu of goals that it is seeking to achieve, indicate what funding strategies it is prepared to consider (capacity payments, volume underwrites, surplus available land etc.) and then invite proposals from the private sector to meet any or all of them. Once the government has considered the response and their preferred choices these could be analysed and reported on by an independent expert who would confirm that best and fair value was being obtained for the public.

What other significant cost drivers for public infrastructure construction projects have not been mentioned in this issues paper? What would be the appropriate role of policy in relation to these drivers?

There are a range of other cost pressures that are worthy of mention.

First, the regulatory conditions that are often imposed on a project can result in extraordinarily high compliance cost. For example, major projects often have in excess of a thousand conditions. In many cases discharging these conditions can in itself produce a requirement for lengthy research and planning exercises as well as highly labour intensive processes to implement. In many cases the environmental or social benefits are elusive but the economic costs are very significant.

Second the absence of guidance from a long term planning perspective can lead to highly inefficient allocation of capital and duplicate projects. This is very evident in the Surat basin gas fields.

Third, the failure to plan for a smooth delivery of a project pipeline between jurisdictions (state, commonwealth, local) can result in an overheating of the market - with its attendant impact on the market for labour and supplies.

Tendering Costs

While it is recognised that governments require competitive pricing, value for money, transparency and appropriate levels of probity, contractors incur very high costs of tendering on large government infrastructure projects especially Design and Construct, PPP and BOOT. Construction companies are not able to absorb the costs incurred on successful and unsuccessful tenders and need to recover these costs. With each new D&C, PPP and BOOT project, the costs of tendering continue to increase.

With large projects, the lengthy time period from initial EOI, then RFT to tender award (often in excess of 12 months), means that company resources and external consultants are required to remain committed to the tender and are not available to other projects. There is a considerable actual and opportunity cost involved. This extended commitment by competing consortia is wasteful of limited industry resources. A reduction in tendering effort and time taken for the evaluation of tenders is critical for reducing tendering costs.

If governments are committed to this course of action for accountability reasons, the only reasonable course of action is to increase the reimbursement of tender costs to those companies/ consortia bidding for the project and to reduce the number on bid lists. In addition, there should be a nationally accepted principle that if a project that has commenced the tendering process is cancelled for any reason, then all bids costs (based on the submission of detailed and verifiable information by tenderers) should be reimbursed by government.

Unreasonable contract conditions

Some contractual provisions in major infrastructure contracts are incorporating unrealistic and unmanageable risk transfer provisions such as requiring the Contractor to take on risk caused by delay by another Government agency. The allocation of risk in such cases should be with the party best equipped to manage such risks.

Other examples include the provision of incomplete or inadequate geo-technical information to contractors and subsequent reluctance or refusal to make adjustments to the costs when the "as found" conditions impose higher costs on the contractor.

Further examples include: Restriction to delay and or disruption relief, notice periods and time bars, design risk, unreasonable warranty risk, allocation of contract documentation risk, scope of work, site information, site conditions, extension of time, indemnities, insurances, fit for purpose.

Improved Workplace Health and Safety (WHS) regulation and implementation

Lend Lease Construction & Infrastructure continues to aspire to operate Incident & Injury Free. In order to do this we focus on strict compliance to Lend Lease Global Minimum Requirements combined with a cultural approach led by uncompromising leadership throughout the business. In a maturing health and safety culture our focus has moved away from the traditional lag indicator measures of LTIFR preferring to focus on Critical Incidents, most of which are significant near misses. Other measures include monthly self-assessment and Quarterly Independent Assessment. This shift in focus has helped us complete FY2013 without a fatal incident and regularly sees over 75% of Lend Lease operations complete a month without any level of injury.

Lend Lease supports the highest standards of safety management being required on all projects, regardless of size, location or type. We support the objectives of the accreditation scheme for contractors managed by the Federal Safety Commissioner (FSC).

However we are concerned that the focus of that scheme and of safety management more generally, has shifted to have a greater emphasis on paperwork and planning and not enough on what is important, day-to-day, on any particular job. The existing approaches to WHS are focused on developing comprehensive written work method statements, and not enough on identifying key risks.

Firms accredited under the FSC arrangement are reluctant to suggest change for fear of losing their accreditation. A critical review of legislative approaches and their implementation could help to streamline and simplify the documentation of WHS systems whilst maintaining its emphasis on outcomes.

Government as buyer could also do more by insisting that all agencies give priority to the selection and appointment of contractors consistent with highest standards of safety performance. The apparent practice of assessing safety as a zero or one selection criterion is not sufficient motivation to work on improving safety. Clients should make tender allowances for measurably superior safety performance.

In summary, Lend Lease urges the Commonwealth and State governments to work to genuinely harmonise different WHS codes and standards across jurisdictions, to minimise the cost of complying with competing systems. The complexity of the harmonisation process is largely lost on trade contractors and suppliers who find it a bureaucratic quagmire. They rely on head contractors to tell what they need to do, which defeats the purpose of getting individual employers to take responsibility for their own employees.

Westlink M7, NSW

Lend Lease