

PAYING OUR WAY ON INFRASTRUCTURE: NEW APPROACHES

ADC Forum Working Group on
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Informing
better decisions



EVENT PARTNERS



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1 BACKGROUND AND ACKNOWLEDGEMENTS (CHRISTOPHER SELTH)

In late 2013 I accepted an invitation from the ADC to chair a working group on Infrastructure Funding and Finance. Having drawn team members from some leading organisations working in the area of infrastructure funding and financing, we worked over a relatively short time frame in early 2014 to deliberate what was the current state of infrastructure funding and financing in Australia and, with an eye towards economic, technological, social and political developments, what could be done to improve on this current state of infrastructure funding and financing. This report is based on the presentation given by the Infrastructure Funding and Financing Working Group (IFFWG) to the ADC Forum National Infrastructure and Cities Summit held in Sydney on 14 March 2014.¹

We have five proposals for working towards a better infrastructure future:

1. Develop a national strategy of reform of broader user charges and value capture mechanisms in order to create a network of local funding pools to fund local infrastructure projects.
2. Implement a national strategy that enables transparent and simple processes, with strong governance across all jurisdictions.
3. Pursue ongoing reform to boost productivity of investment in infrastructure. Lowering costs and easing administration of processes will enable productivity improvements not just at more centralised levels, they will also improve ability to act at more localised levels.
4. Further develop the breadth of investment products to finance infrastructure so as to not only make the long investment horizon attractive when compared with other available asset classes, but also facilitate investment by individuals in local assets, including greenfield development. These products should make it as easy to invest in an onshore, local infrastructure asset as an offshore infrastructure asset.
5. Develop engagement processes as a real and material cornerstone to the infrastructure planning process, from local initiatives to how large-scale infrastructure initiatives are communicated.

As chair of the IFFWG, I extend my personal thanks to each member of the Working Group for giving freely of not only their time to participate in many conference calls and engaging in extended email discussions between those calls, as well as attending the ADC Summit in Sydney on 14 March 2014. I also thank them for generously sharing their professional expertise and wisdom to the development of our proposals and this report. Each chapter reflects not only the main theme of that chapter (funding, financing, engagement, processes) but also has insights on some of these other themes.

This is the beginning of an ongoing conversation which has already spread beyond the IFFWG members to others with an interest in infrastructure funding and financing.

2 STRATEGIC OVERVIEW (CHRISTOPHER SELTH)

Introduction

There is a significant need for on-going infrastructure investment to underwrite the productive activity of our economies, and the delivery to our communities of the quality of life and living environments that they hope for.

Despite both need and community demand, governments are facing downward pressure on their ability to raise funding to cover these investments given globally experienced political constraints around both taxation and user charges.² A perverse aspect of this situation is evidence that communities are prepared to pay for the delivery of infrastructure where they have confidence that they will be delivered promised benefits, and will be treated fairly.³ Trust is a critical issue. Engagement with the community, rebuilding social capital, will allow not only the expansion of the funding base, but also the delivery of a broadly based pipeline of infrastructure investment. It requires that conversations around infrastructure move beyond highly politicised mega projects to discussions around community needs and expectations. The evolution of the conversation needs to range from engaging the community with respect to the case for large-scale initiatives in a manner that engages their personal concerns, to empowering the community to drive initiatives in their localities, born of those concerns. This engagement needs to be matched by a commitment to facilitating new higher levels of transparency as to the operation of all processes and decision-making. Such transparency not only underwrites trust, it facilitates competitive processes, cutting costs for delivery.

The decline in trust is directly responsible for the current decline in funding choices, which will impinge on any strategy to boost infrastructure investment. It must be addressed, but in fact represents a significant opportunity.

The growth of retirement savings pools represents a major source of finance that can be used to underwrite investment. By configuring those investments so that the community recognise them, in part, as meeting localised needs and expectations, these projects should benefit from community support to increase funding from charges and levies, and financing derived in part from the community's pension savings, as well as global savings pools.

Achievement of this "simple" equilibrium of course requires a combination of solid processes, identifying projects based on shared insight and community engagement, as well as the configuration of financial instruments to best meet risk/return characteristics and liquidity requirements of those pension pools. Historically these financing processes have been centralized, reflecting challenges in delivering these outcomes in a manner consistent with broad fiduciary requirements. This centralization, however, has coloured the asset class. Costs for delivery have been high relative to other asset classes, particularly for smaller projects, and to smaller investors. With the growth of Self Managed Superannuation Funds (SMSF) this weakness could be particularly exposed, but it also presents a major opportunity. Reforms to these processes should make it as easy to invest at least part of your retirement savings in the local community as in global assets, with comparable risks and returns. Financial structures need to facilitate a deepening and broadening of the market. These reforms will expand the scope of both large-scale

infrastructure investment processes and localized initiatives. Furthermore, with the demographic shift within our population towards retirement, these investments could be ideal to underwrite the delivery of annuity-style return structures to provide income to retirees.

Government support of infrastructure against its taxing powers and the national balance sheet represent the most common method for reducing risk to any specific infrastructure project, but there are other means for facilitating this outcome. The pooling of revenues accruing to a collection of infrastructure assets will significantly reduce risks to forecasts against any specific asset, cutting financing costs. Revenue pools such as this could also allow for some assets and activities that cannot be funded by direct user charges drawing against the broader funding base. Equivalently, pooling the debts of infrastructure assets reduces asset-specific risk, or offering mono-line insurance on the debts of a specific asset based on the insurer's pooling of those risks, offers similar risk reduction. Innovation in financing structures should be built on a blend of these approaches.

Infrastructure investment, given the long duration of its nature, needs to respond not just to short-term cyclical threats. The infrastructure challenge sits against a global backdrop of high debt balances and the risk of "jobless growth".⁴ Those circumstances are driven by significant changes in the structures of our economies, which in turn are driven by a mix of factors including globalization, aging demographics, and technological changes driving broad-based innovation. Those innovations represent an important consideration to the development of infrastructure funding and financing strategy. Information technology can not only boost productivity in construction, dropping the cost of delivery of physical infrastructure, but also recast processes for service delivery from social infrastructure; it can and will facilitate community engagement in project identification and delivery. Technologies like Building Information Modeling and crowd design and funding platforms like Crowdfunder or neighbor.ly for community driven initiatives are already rolling out in the US and other countries. As we have seen in other sectors the impact of these technologies will compound and accelerate. They may not replace our current processes, but they will undoubtedly supplement them and shift the conversation. History suggests that whilst traditional structures have great difficulties incorporating these kinds of changes, they cannot prevent them. They may start as niche opportunities, but by actively engaging in driving these processes Australia could significantly strengthen productivity, entrepreneurialism, and community engagement in infrastructure investment, whilst generating the assets needed by our retirement savings pool. To repeat, we need to make it as easy, and attractive, to invest in our localities as it is in global assets.

The evolution of the economic environment since the GFC

It is important that we recognize up front the significant positive innovations in the area of infrastructure over the 6 years since the collapse of Lehman.

It is striking to recall that Lehman's collapse was 15 September 2008. ADC's last infrastructure event was 7 October 2008. At that point the PPP model seemed a well-evolved response to the challenges of infrastructure provision. The GFC overlaid not just a near-death liquidity crisis; it accelerated the evolution of

the relationship between the individual and the state in terms of understanding and allocating risk. Constrained optimization of balance sheets was demanded against a backdrop of the outcome of poor practices on the parts of both the private and public sectors globally. At the same time, the state needed to step up and deliver system support and a contra-cyclical stimulus in whatever way it was capable. These methods varied globally depending on capacities specific to different national situations. Government deficits blew out as fiscal stabilisers came into play. Monetary policy levers were even more active. Innovations like Quantitative Easing were deployed to offset extreme risk premiums.

As we now commence tentative steps back to "normalcy", though this new normal is probably not the same as the old normal, financial markets are faced with the question that was so strikingly posed by the GFC: *Are our investments generating the needed returns, relative to the risks we are taking on?* This question has been somewhat clouded by the low global interest rate environment, driven by central bank actions seeking to put a floor on the system in the absence of the kind of risk-taking essential to economic growth.

Financial market concerns overlay a profound shift in the underlying environment. Our communities struggle with not just the on-going impact of globalisation, but also the accelerating impact of technological change disrupting traditional business models, fundamentally altering individuals' terms of employment. Jobs for life are dead. How employment can be sustained has become a central concern. Policies to tackle these challenges increasingly concentrate on two levers, one high level, the other applied: productivity and infrastructure. After a decline in infrastructure investment in many parts of the world, can government restart this engine to promote growth and productivity enhancement? Given the strains on most government balance sheets, how can private-sector capital be used to finance this process?

What is clear is that significant drivers of the deflationary forces at play in many parts of the global economy include the structural changes described above, evidenced by a rightward shift of the supply curve. This is a critical aspect of the macro-economic dilemma being faced by governments globally - as significant as debt overhangs post GFC - and is one of the critical reasons for the poor response of many economies to significant conventional and unconventional macro-economic stimulus. If gains derived from falling costs in manufacturing and the service sectors are not reinvested in new opportunities, employment is at risk. Those investments need to be more than just stopgaps giving temporary employment relief. They need to be economically dynamic, re-equipping the population for a changing environment, for the "new normal" where the past is not necessarily the relevant reference point for planning. Infrastructure policy must be an integral part of a future-facing vision, which both inspires and engages communities and empowers them to take the initiative at the local level where possible. New technologies both demand such a response and offer opportunity to step up.

The US reliance on the housing sector to absorb job losses when this process initiated in the 1990s led to the sub-prime debacle, and was a key trigger of the GFC. Our policy response now must

not replicate those mistakes. Government using its balance sheet to prop up the old is not a constructive solution, and may just postpone a return to growth while risking an expanding crisis.

Quantitative easing, and easy money, applied in many parts of the world in the absence of a preparedness to invest in real assets, may have prevented a debt deflation, but it has risked bubbles in some asset classes, with ambiguous positive benefits. Record low interest rates, and plentiful liquidity, have not unlocked investment. This may be the consequence of relying solely on monetary policy as the supply curve moves right. Lawrence Summers highlighted this risk in late 2013, speaking to a scenario of secular stagnation.⁵ Structural changes driven by disruptive technology are only set to increase. If deflationary forces combined with weak employment keep monetary policy loose and global interest rates low, not only will the level of returns to superannuation needed to support retirement struggle to do so, but Australia may also suffer other perverse effects. The Australian dollar may remain stubbornly high in the presence of prolonged low global rates with Australian rates stubbornly high given risks in housing prices.

How are productive investments to be instigated when the community is burdened with lost jobs and debt overhangs, including significant debt held against assets whose value may have been structurally compromised? It is essential then that finance is unlocked to underwrite investment both in traditional areas currently not readily capable of raising money in an uncertain environment, and new areas that will be future employers. Infrastructure investment represents a critical opportunity to drive part of this process. Whilst austerity is needed with respect to wasteful government expenditure, it may prove counterproductive if it undercuts investment that is both needed of itself, and offers broader economic support.

Developing new responses

Challenge drives innovation. The challenge of the GFC drove innovation in policy. Recycling of capital by government from privatized brownfield assets to building greenfield assets, and in turn privatizing those assets as usage patterns become clear, as a brownfield asset, represents the explicit hypothecation of privatization proceeds to the building of new infrastructure. It recognizes government may be better placed to originate new infrastructure than the private sector, or, at the very least, that private funds are less inclined to finance greenfield than brown. The challenge posed by our need to significantly increase the range of infrastructure investments undertaken invites us to move beyond the status quo of recycling capital as the way to finance greenfield infrastructure.

Both domestic and global pension savings pools are set to expand significantly, and offer a substantial source of finance to infrastructure investment. The scale of that potential source of finance represents both an opportunity, but also a very significant and particular risk, similar to what we have seen with QE - abundant liquidity in the absence of real asset formation, risks bidding up the price of existing assets, and financial profits not matched by any expansion in productivity potential and value creation. Unlike QE, however, the finance offered by pension savings pools requires real and sustainable returns to underwrite the income needs of retirees. The obligation to meet those needs requires that investments genuinely expand productive potential.

Financial profits not backed by investment strengthening the underlying economy will not represent a sustainable income stream to fund retirement. This would represent a significant risk to the retirement pool. Projects need to be selected mindful of those obligations, not just on the basis of the immediate capacity to sell a range of assets of mixed quality to a pension pool desperate for return. Project selection must be sound, and reflective of long-term productivity enhancement to the economy. The provision of a quality pipeline of additional infrastructure assets to meet the needs of the pension pool could also ease upward pressure on residential property prices. The hunt for return combined with the difficulties in differentiating different styles of return risks seeing superannuation funds, particularly self managed super, over exposed to inflated assets in the absence of alternatives.

Additionally the structuring of infrastructure investment financing must be cognisant of the liquidity requirement of pension savings. An aging population will increasingly require liquidity, drawing down against assets. Annuity-style instruments will become increasingly important. Investing in asset-backed infrastructure bonds for example could facilitate yield and be sufficiently liquid to facilitate draw-down. A different class of investor may want equity in a project. This represents a very different risk profile to owning debt. Interests of equity and debt holders will be in conflict in a risk event around the underlying asset. Infrastructure assets need to be packaged in a manner that they are accessible not just to the large superannuation funds, but to self managed super schemes in a cost effective manner. High fees for managing the asset would discourage investment and represent an additional risk to the efficient allocation of capital towards this space.

If superannuation funds are to own direct equity stakes in unlisted projects, such as PPP's, sound governance and transparency take on particular importance. Failure to administer these processes in a cost-effective manner could represent an extraordinary imposition on funds, potentially either detracting significantly from returns, or discouraging investment.

Potential risks

Given the importance of these returns to retirees it is likely that guarantees would be sought and valued, enhancing the scale of demand. Such guarantees, "credit enhancements", on assets whose capacity to generate returns is not matched by what is realised as their underlying contribution to productive potential and value creation to the society, could represent a significant cost if poorly structured. Given the scale of the infrastructure investment needs, and returns required by superannuation funds, misallocation of those funds to unproductive projects would represent either a major burden to government and community, or sovereign risk to superannuation funds and retirees.

Financing costs could tighten with reversal of QE policies. Globally, there could be increased offer of significant projects as various governments seek to use this tool to drive growth. The same is true within Australia. Local infrastructure needs may remain unsatisfied unless they are configured to compete in terms of return, risk profile, and ease of investment with larger-scale projects.

How to finance greenfield assets

Getting private sector financing for greenfield assets is more challenging, given known difficulties in accurately forecasting utilization rates, as well as the project risks. Consensus is that government alone has the capability to initiate these projects, given its ability to offset risks against a broader pool of funding sources and assets. The reliance on privatization revenues as the finance anchor in this process, supplemented by appropriate user charges, is a way forward. Further, as we have seen with the likes of the Westconnex structure, projects can be staged with sections on-sold to the private sector as usage patterns of the asset become clear and funding becomes more predictable. These processes represent part of an answer to the infrastructure funding/financing dilemma.

How government spends the proceeds of privatization is obviously a critical variable in the greenfield/brownfield deliberation. Yet privatising brownfield assets does not reduce the significance of solid project assessment and prioritisation for new projects. It is important to note that if government policy is to pursue only those infrastructure projects that can be readily re-cycled to the private sector on the basis of the stream of user charges, it is significantly limiting the scope of new developments. The use of availability payments does allow the government to develop assets funded by tax revenues, passing them to the private sector to gain operational efficiencies. Such mechanisms, however, do not add to funding sources; a significant constraint on initiating greenfield projects if government believes it cannot raise the level of taxation.

It is also important to qualify the use of cost benefit analysis in project evaluation. Cost benefit analysis represents financial best practice. Failure to employ such methodologies raises serious questions about the processes involved in project selection. There is, however, a limit to the utility of cost benefit analysis. Whilst costs tend to cluster in start-up phases, and are relatively predictable, significant benefits can accrue beyond forecast time horizons, and are not readily predictable. Recent history has demonstrated that even short-term forecasts can prove highly unreliable; witness electricity demand projections used to support investment in distribution network upgrades. Forecasts are frequently skewed to support cases that are driven by powerful stakeholders. Longer-term strategic judgments on infrastructure have been frowned upon by parts of the economic establishment as effectively “picking winners” and in practice represent a form of industry policy. As such, broad community engagement and political debate around the question of what is good infrastructure investment cannot be discarded in favour of the mechanical application of cost benefit analysis to select the projects for development. Good investment strategies combine judicious use of cost benefit with scenario analysis of a range of possible outcomes, and are structured to adjust if evidence indicates development paths differ significantly from expectations.

Evolution of the role of government

The IFFWG did not explore the question of appropriate use of taxation, at the broad level, to fund infrastructure investment, nor government borrowing to finance it. These questions were approached by the Infrastructure Needs Quantum Workgroup. The use of government borrowing to finance infrastructure that raises national productivity should not be excluded as an option. What

is the responsible level of state debt is a question to engage with the community, similarly the appropriate use of taxation to fund asset investment versus service provision and transfer payments. Rather than revisiting this discussion it is important to note capacity to fund provision of infrastructure should be consistent with responsibility to provide infrastructure in order to establish consistent structures on which to base financing arrangements. Inconsistencies in Australia’s government arrangements between federal, state and local governments in this regard potentially add to the sovereign risk premium. Whilst sound fiscal management is a “motherhood” principle, perceived difficulties in gaining the political mandate to use taxation to underwrite productive investment does not speak to national strength. Governments’ prudent and targeted use of the full range of funding options matched against well-selected projects is an important element of sound management of the national estate. The IFFWG chose to focus on the potential for greater localization of some of these decisions, rather than referring them to central authorities such as the Federal government. This is consistent with the objectives of the mooted review of Federalism now being suggested, again, in several quarters. Past attempts to tackle this issue have met mixed success; the need to do so is compelling. Balancing the local with mutual support is a critical discussion. The commitment to support agreed common standards across the nation for critical infrastructures will remain a critical issue of “federal” responsibility, hence the title “commonwealth”.

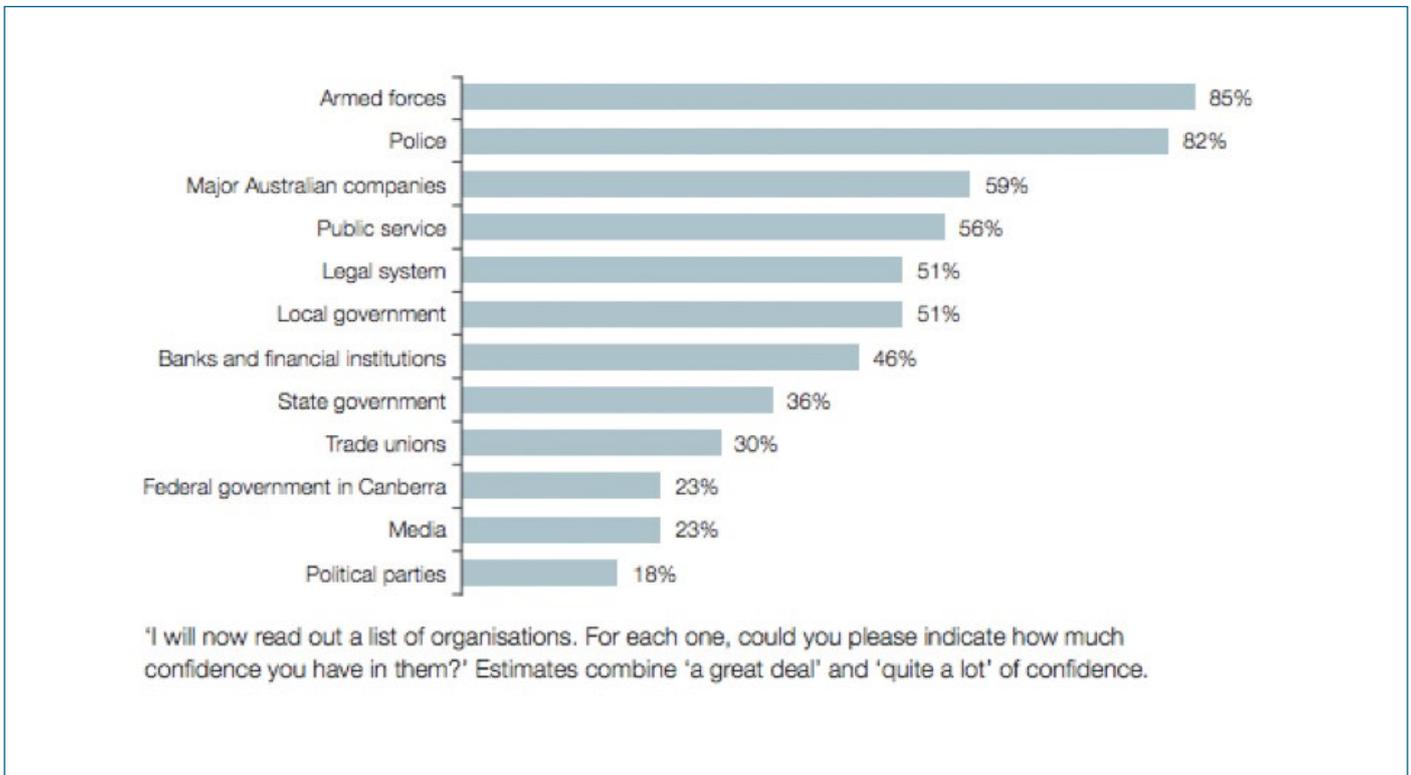
Increasing the role of community

A tandem process to address infrastructure needs with action from federal and state government is action driven from the level of community. More can be done, and better outcomes can be achieved, by broadening funding and financing frameworks, not just to better support centralized processes, but also to enable greater activity to take place at localised levels, against a renewed framework of community engagement. Funding sources can be expanded through a new compact with communities, whereby the community trusts that those funds obtained from existing infrastructure assets (for example by way of user charges) will be used to meet infrastructure needs. Financing costs can fall significantly: by raising finance against pools of funding rather than specific projects, or securing finance of individual projects by offering insurance against pools of risk; by developing a broader array of financial instruments that can be invested in by domestic superannuation pools, extending beyond large funds to self-managed superannuation, as well as to global investors. A wider array of projects could be pursued, both at the national level for ‘namesake’ projects as well as smaller-scale infrastructure projects where the benefits are more localised. Individuals should feel that it is as easy to invest in their local communities as it is in global markets. This is currently not the case. Facilitating such investment opportunities could unlock a broader array of projects, underwrite entrepreneurial activity, and boost community support.

The question of localisation

Risk capital must be outlaid, but there is risk if it is simply re-invested in renewing or maintaining legacy assets. A response must encompass a collection of dynamics within a complex system. Project identification and prioritisation calls on a renewed focus on the intelligent and evolving use of our planning instrumentalities to capture “best thinking” on how to undertake

FIGURE 1: PUBLIC CONFIDENCE IN ORGANS OF CIVIC SOCIETY



Source: McAlistair et al. (2012)

these tasks. Reliance on smarter planning from the centre also poses several risks. Certain aspects of the systemic changes at play may not be readily comprehended at the centre, which risks application of old logics to current problems. The political reality is that communities can be unsympathetic to the imposition of "solutions" to their local needs unless there is a level of trust built up by a legacy of good policy execution, or via quality engagement with that community to rebuild trust. This issue is non-trivial and is one of the determinants of how policies can be funded and financed.

Improving insights gathered and shared with the community will deliver better outcomes

The centre has challenges in raising funding from a community which questions the centre's understanding of their needs. The community doubts that funds raised are effectively being spent where promised. A range of studies suggest the community wants better infrastructure, and is prepared to pay for it, but does not trust the centre to deliver it. One measure of community trust comes from an ANU survey of public confidence in a number of organs of civil society. The results indicate that survey respondents have more confidence in local government than in either state or federal governments (Figure 1).

To quote Barber (2013, p.13):

Cities have little choice: to survive and flourish they must remain hospitable to pragmatism and problem solving, to cooperation and networking, to creativity and innovation.

People tend to trust someone who collects their garbage. It is an immediate relationship. Given public perception of a lack of

confidence in federal government, the centre's capacity to act is constrained.⁶

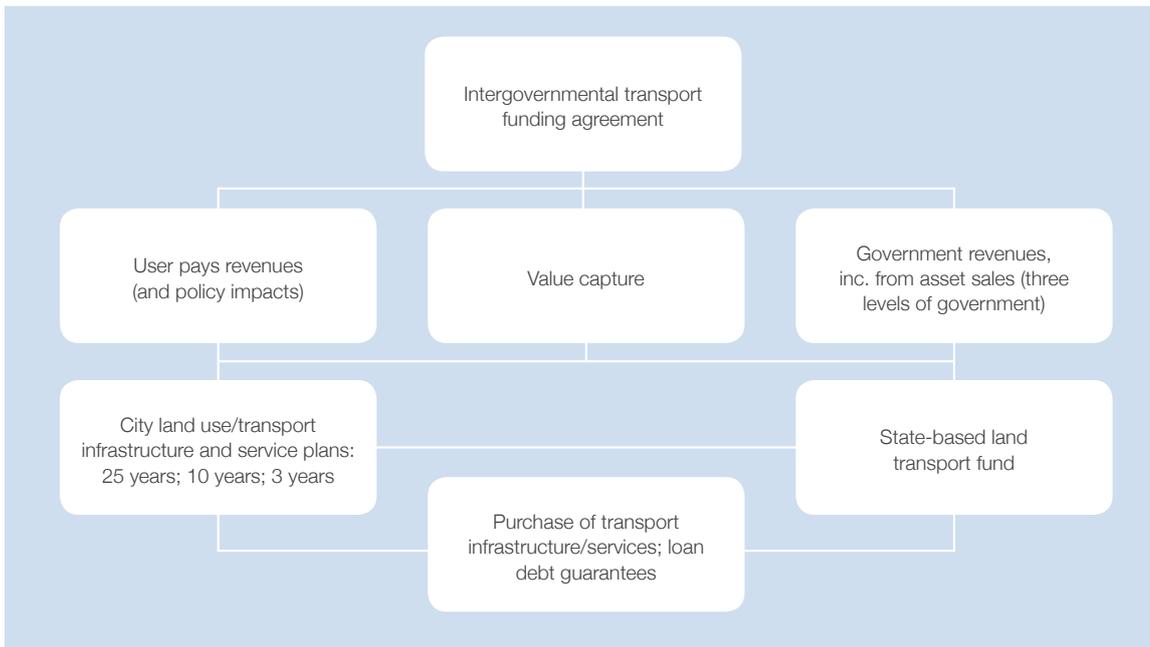
Government has a natural bias towards large-scale projects. Through their very nature these projects have greater risks if poorly executed. Furthermore, large-scale projects need to be considered in light of likely technological disruptions that will impact all forms of activity. Localised/regional demand for infrastructure assets can be broken into two groups:

1. Access to larger scale assets networked across multiple localities/regions.
2. Assets/services that can be originated and administered from a localised perspective.

Provision of these services represents a partnership between the centre and the localities/regions. A significant aspect of this process is to move from hierarchical relationships where responsibility is unclear, allowing blame to be shifted for poor execution. Arrangements which combine clear responsibilities with functional partnerships as appropriate can deliver better infrastructure outcomes. One avenue to drive functional relationships is a focus on outcomes, with published benchmarks of infrastructure delivery against community expectations of the impact of that infrastructure. Simply reverting to current hierarchical processes perpetuates community disengagement in infrastructure planning and development processes.

A capacity to act at localised levels must be cost effective. Cost structures may be best managed by a combination of good governance processes, marked by their transparency, and the application of best practice to the processes for project selection,

FIGURE 2: POSSIBLE POOLING STRUCTURE ⁷



tendering, appointment of partners, delivery and ongoing maintenance. Some costs may be minimized by sharing some support services, and outsourcing where possible. Not all the expertise necessary to undertake these tasks may exist within local areas. The centre could facilitate this by committing some of its support resources to operate these processes at the local level.

These steps are not intended to diminish the significance of the centre in planning and administering the delivery of infrastructure, whether it be by government alone or government in partnership with the private sector. Whilst acknowledging the critical role the centre plays, important aspects of an infrastructure strategy with both large-scale projects that benefit large sections of the economy and small-scale projects with more localised benefits cannot be successfully implemented from the centre. Design, ownership, developing funding sources (whether by user charges, or locally mandated levies), and even some financing (through access to local savings in self-managed superannuation and community banking, of some or part of these assets) can increase the scope of infrastructure strategy well beyond one confined to centralized processes making centralized decisions, whilst also building community support. Supporting localised infrastructure initiatives is consistent with developing a culture of responsibility. The infrastructure development strategy should be a powerful enabler of regional development, as much as policies around SME's or innovation, supporting employment and community well being.

Five proposals

We make five proposals in relation to the funding and financing of infrastructure.

- 1. Develop a national strategy of reform of broader user charges and value capture mechanisms in order to create a network of local funding pools to fund local infrastructure projects.

The current situation is a patchwork of charges applied opportunistically, based on diverse historical circumstances. There is considerable pushback from the community to suggestions of charges being applied to legacy assets. Pushback tends to focus on the inequity of introducing user charges for a particularly sensitive asset. Yet the current situation clearly is marked by inconsistencies that represent unfairness, and inefficiency. These will become more striking if user charging is not subject to an overarching review.

Against this backdrop there is an opportunity to revisit all assets, recasting user charges so that they are fairly applied across state or national level. By broadening the application to the broadest level no single locality should feel singled out for unfair treatment. This is consistent with the end of the age of entitlement. It involves identifying total cost to users so that the net effect can be assessed and managed in order to deal with undesired outcomes. The process also provides the capacity to expand the funding base, partially offsetting the downward trend in central government capacity to boost funding.⁸

The carrot in this strategy is the pooling of part or all these funds, in localised/district pools to support localised/district infrastructure. Those pools might be constituted to cover all infrastructure charges in a district, or just those applicable to a particular class of infrastructure. The pools could include user charges, value capture charges and local levies, and be configured to take into account availability payments. These pools offer multiple advantages. They are more predictable than charges applied to individual assets, particularly new assets. As such they lower the risk of greenfield development as it can be underwritten against such diversified funding sources. An example of a possible pooling structure is set out in Figure 2.

These pools also increasingly match geographic location of assets, with additional funding sources. They improve the relationship between the community's sense of ownership of the

assets, responsibility for funding the assets, and the potential to finance the assets through some allocation of its savings, particularly superannuation, into these local assets. The greater immediacy of these processes speaks also to the greater capacity to fully engage the community in driving these processes, and facilitate community driven initiatives.

The reform of user charge bases could be administered at the state level without the formation of localised funds. However this would diminish the potential for community engagement and ownership of infrastructure relevant to that community.

This form of initiative is now being seen globally. In the UK we are seeing Single Local Growth Funds (SLGFs) are an example of initiatives re-orienting towards giving communities greater say in designing and implementing solutions.⁹

The recent Federal budget has made a move in this direction with adjustments made to fuel excise. Pushback to this policy reflects the points made in this report: does the community feel the monies are going to the right investments and is application fair? These debates will always occur, but the best outcomes will be a function of these policies representing sound assessment of the situation built in engagement with the community. Political support should follow. Without strong links to community the risk is important policy development will be lost.

2. Implement a national strategy that enables transparent and simple processes, with strong governance across all jurisdictions.

Trust is critical to support initiatives both from the centre, and to enable action at the localised level.¹⁰ All these processes must be backed by the highest order of transparency whereby the community can see that revenue collected via these processes is used for infrastructure maintenance and greenfield infrastructure projects in the same locality.¹¹ Transparency on funding is matched with a high level of community engagement in decision-making on infrastructure projects, combined with public benchmarks on service quality. A community paying for infrastructure will need an explanation from the infrastructure provider if what is delivered to that community does not meet its expectations. This is not to say that all expectations can be met, but the community will benefit from a clearer understanding of the differences between those expectations that can be met and the outcomes of project selection and delivery when they feel they have been fully party to those processes. Given all expectations are unlikely to be met, the costs of delivering on those expectations that can be met will be more clear. In this way, the community may be more accepting of what is achievable.

With better engagement of local communities leading to improved infrastructure funding and planning processes, the conversation on national or state planning pipelines can be revitalised. Enfranchised local communities, and state governments who feel greater capacity to engage with their particular needs, should be more sympathetic to the development of a state planning pipeline process where responsibility for outcomes is clear. The need for good process and the development of a quality pipeline of infrastructure projects is made clear.

Failure to implement such processes will see investments the community needs either lost, made more expensive, or misallocated by political arguments at each level of government, and between levels of government. Good process reaching to the community breaks this gridlock. It is essential to facilitate the investment we need.

3. Pursue ongoing reform to boost productivity of investment in infrastructure. Lowering costs and easing administration of processes will enable productivity improvements not just at more centralised levels, they will also improve ability to act at more localised levels.

A number of these issues have been discussed in the Productivity Commission (2014). When matched with the drive to support more localised initiatives, these process improvements further empower action, attracting investment, boosting productivity and lowering the cost of finance. Combined with transparency and good governance, they also facilitate competitive tender, and the competition between good ideas.

More standard processes allow local investment opportunities to be comparable and competitive with those of other localities, as well as global investment opportunities. Introducing these standards requires adequate resourcing of both process oversight and community engagement at all stages of infrastructure development.

New technologies are now rolling out globally that seem likely to materially impact how these processes are undertaken in areas ranging from managing construction processes to community engagement. These need to be adopted as quickly as possible, echoing recommendations made by numerous industry groups.¹²

4. Further develop the breadth of investment products to finance infrastructure so as to not only make the long investment horizon attractive when compared with other available asset classes, but also facilitate investment by individuals in local assets, including greenfield development. These products should make it as easy to invest in an onshore, local infrastructure asset as an offshore infrastructure asset.

This will be facilitated not only through strong and more transparent governance and reporting and reliance on local funding pools, but also by potential new structures around financial instruments.

Those structures could include:

- Pooling local projects, potentially matching funding pools suggested in proposal one, to reduce project specific risk, and increase deal size to allow large superannuation funds to invest.
- Mono-line credit insurance around individual project debt instruments.
- Tax structures taking advantage of tax losses incurred during start up phase.

This strategy would go hand in hand with the long sought expansion of the Australian corporate bond market.

The reality is that Australian companies have demonstrated relatively limited demand for such bonds. The expansion of the infrastructure pool however offers an opportunity and a need for such a market as some projects are currently constrained by the current absence of this market. This leaves projects with a refinancing risk after five years as to where bank funding is available from. Banks' capital structures do not support the issue of debt for longer duration, as is normal for long duration infrastructure assets. The development of this bond market would also lower financing costs for localised initiatives. The US has long benefited from a municipal bond market. Australia should also benefit from such arrangements. These bonds would also better facilitate global capital investing in localised Australian assets.

The creation of these financial instruments delivers not only cheaper, less volatile financing options to large projects, it also offers the opportunity to develop smaller-scale financing structures further enabling individuals to invest part of their retirement and other savings in their own community assets, significantly expanding community engagement and the range of opportunities for investment.

5. Develop engagement processes as a real and material cornerstone to the infrastructure planning process, from local initiatives to how large-scale infrastructure initiatives are communicated.

This strategy of local funding pools and community engagement in infrastructure processes does not seek to diminish the significance of the large projects to be realised through current central planning processes. It is additional and complementary to large-scale initiatives. It speaks to the evolution of the national conversation around infrastructure. Our leadership retains its responsibility to bring to the community a vision to meet the challenges facing us, built on a conversation where the benefits, and costs, are made clear to the community in terms which echo individuals' immediate concerns on trigger issues like job security, the cost of living, and the quality of life.

Those projects include improvements in how we facilitate freight handling, water irrigation for agriculture, broadband access, and intercity transport structures from airports to rail. We need to get these right. Strong project selection to maximise community benefits is essential, both given the national productivity challenge, to boost Australia's international competitiveness, as well as offering the superannuation pool reliable income streams needed to support the needs of Australian retirees.

But boosting growth in the face of the challenges Australia and the global economy face requires both large initiatives and others that are more broadly based. It needs to avoid the risk of concentrating investments too narrowly in big ticket items that could be challenged by the structural changes to the economy and to our communities that we are witnessing. By engaging in a broader array of localised initiatives, infrastructure potentially gains additional funding, galvanises communities to consider their needs and wants, and delivers return streams that can support retirement savings.

Community action based on an appreciation of local need is already driving infrastructure opportunities. We are now seeing a number of projects born out of the community, which then turns to government for facilitation. Even without a localisation drive supported from the centre, localised action is rising. Examples include the Gold Coast Rapid Transit and the Dulwich Hill Light Rail Extension.

All levels of government should move to expand community engagement, complemented by new crowd engagement technologies. This approach when linked to our first 4 recommendations facilitation of practical delivery of assets, will drive not just a significant wave of investment in infrastructure, boosting employment, productivity, and quality of our life and spaces, it will represent a reinvigoration of the social capital of the nation.

Conclusion

While the five proposals noted above represent the result of consideration and debate amongst the working group members, as well as interaction with the attendees at the ADC Summit and a broader range of stakeholders, the rest of this report spells out some of the details behind the proposals and represents the work of the individual authors.¹³

Funding of infrastructure, the key to our first two proposals, is addressed in separate chapters by two IFFWG team members. Firstly, Martin Locke from PricewaterhouseCoopers examines user charges and similar mechanisms observed in infrastructure projects in Australia, with reference to UK examples of alternative models of user charges. Locke's view, shared by all IFFWG members, is that there is potential to increase the base of user charges. Jon Hickman, the Chair of the Victorian Coastal Council, then looks at infrastructure funding from the view that as many infrastructure projects have a broad range of people who benefit from that infrastructure but do so in different ways, securing funding for infrastructure projects could include a variety of mechanisms, including existing land rating systems operated by local councils.¹⁴

The various processes of infrastructure development which are addressed in part by our second proposal but more comprehensively in our third proposal, is addressed by me in two chapters. The first of these chapters examines the processes to support infrastructure development.

Financing of infrastructure, the key to our fourth proposal, is addressed in two chapters. Gordon Noble from the Association of Super Funds Australia presents the superannuation fund perspective on infrastructure assets as an investment class. Robert Nicholson with Josh Sgro from Herbert Smith Freehills present an alternative model for financing infrastructure projects. Both chapters discuss the bond market in Australia as bonds are regarded as being a way to secure financing. The recent Productivity Commission's draft report has requested more details on the weakness of the corporate bond market.¹⁵ We are also interested in this market and both Nicholson/Sgro and Noble address this market, including a discussion of alternatives to corporate bonds such as sovereign bonds or project specific infrastructure bonds.

Engaging the community in infrastructure development, one of two keys to our fifth proposal, is addressed by Katherine Teh-White, Paul McDonald and Peter Cochrane from Futureye. Maintaining a role for central government to initiate infrastructure projects, the other key to our fifth proposal, is addressed by Scott Ryall from CLSA in his contribution on the investment opportunities for infrastructure.

3 FUNDING INFRASTRUCTURE (MARTIN LOCKE)

Introduction

The debate on infrastructure has progressed to the point where certain principles around infrastructure funding have become widely accepted:

- There is no shortage of private capital, in particular from super funds to fund infrastructure; the challenge is structuring projects to meet investor requirements.
- Private financing is not a magic pudding.
- Infrastructure can only be funded either by government through taxation or by users through user charges; expanding funding capacity requires Government capital recycling and/or widening the user-pays net.¹⁶
- Government capital recycling is currently more widely accepted and is being expedited across Australia. Recent success of the long term lease of Port Botany and the positive market and community response to the lease of the Port of Newcastle implies accelerated pursuit of the recycling of brownfield assets. However, such assets are finite, and the easier transactions to take to market are already in progress.
- Government does not have surplus funds to pay for new infrastructure; the combined annual fiscal deficit across all levels of government in Australia could reach \$75 billion by 2050.

In Australia at present we are seeing constructive discussion and increasing momentum around capital recycling and ways to mobilise longer term debt from super funds. This debate has been underway for some time. There have been successful models of capital recycling in Australia and more will follow. The debate clearly needs to include a bond market. But all these debates are underway and progressing albeit slowly but steadily.

Yet, in respect of the funding issue (i.e. user pays versus tax), this debate is less progressed. There is a need to deepen the argument around wider application of user charges/value capture. Australia has a proud history of being a global leader in best practice around investment in infrastructure and was at the forefront of creating a global industry around private infrastructure investment in the 1990s. However, Australia has fallen behind globally and is in danger of complacency and losing sight of the long term vision. By way of contrast, New Zealand has been far more willing to tackle the reform agenda and is now looking to export that knowledge back to Australia.¹⁷

It is recognised that there are challenges in implementing reform in this area but we believe the time is right for a bold long term vision. Infrastructure has been prioritised as a national issue and the community is demanding improvements in transport and relief from congestion. At the same time our super funds have both the capital and appetite to invest.

The critical action to be taken by Government to address the infrastructure funding challenge based on the above is to widen the application of user charges. This needs to be encouraged to create efficient markets for investment in economic infrastructure.

User charges

The main factor holding back the wider application of user charges in roads is community resistance to the perception of user charges as yet another tax. In this regard new institutional models for infrastructure embracing super fund investment would facilitate community acceptance. Good governance is key and broader introduction of user charges should be based on clear principles including:

- The imposition of charges must be viewed by the community as fair and equitable with consistent application and regulation.
- The revenue flowing from the user charges should be hypothecated for infrastructure development and maintenance.
- Infrastructure is prioritised and selected for development (and charging) where the users value the benefit being created.
- All users and beneficiaries (direct and indirect) pay charges to contribute to the cost of the infrastructure.

Both the market and the community can move on from previous resistance to user charging. Super funds are promoting their ownership of infrastructure to their members. This will be the most effective way in breaking the nexus between community aversion to paying user charges and paying another tax/ putting profit in the hands of the private sector.

The concept of developing markets around user charges for heavy vehicles is not new. The trucking community do not see this negatively as a new tax provided charges are hypothecated to road investment and maintenance.¹⁸ The use of vehicle telematics can be used to track precisely kilometres travelled so a fair pricing mechanism is capable of being developed and applied. Moreover, pricing reform will mean more efficient use and investment in road networks. Countries like Germany already use this approach.¹⁹

Value capture

Moreover, the concept of user pays is not just about charging but extends to broader capture of the value created by infrastructure. This capitalises on the indirect economic externalities of infrastructure, which are not necessarily captured financially. Examples of broader value creation include relieving congestion on roads, uplifting property values and creating jobs. The Gold Coast Light Rail is a good example demonstrating the power of the local community to embrace user pays and value capture and catalyse infrastructure development. It was the Gold Coast City Council that promoted the project and indeed levied a City Transport Improvement Charge on all ratepayers. This allowed the Council to contribute \$120 million to the light rail project and accelerate its development. This project is all about city building and catalysing development; property value uplift is a major benefit.

This leads to further discussion around the introduction of Tax Increment Financing, which specifically seeks to capture the uplifts in economic value consequent upon infrastructure development. The idea is to use incremental taxes to fund infrastructure investment around the creation of Development Authorities and

the UK is leading this initiative. There is a timing issue here: the tax revenue only flows long after the initial investment so the Commonwealth will need to step up and provide credit enhancement up front to get this concept moving.

The establishment of the Greater Manchester Combined Authority in the UK is a great example of the community, local Government and National Government co-operating to accelerate development. The Authority is investing over £1 billion up front in infrastructure with repayment from future revenues; the model uses a formula linked to changes in rateable values over time to provide a hypothecated revenue stream over 30 years. Co-funding is being provided by institutional investors including the Greater Manchester Pension Fund. The Authority states that this is a major shift towards local decision making with the framework being used to align funding and assets to prioritise growth in the region and cut red tape. The scheme is intended to have lower overheads for appraisal and monitoring, with increased returns achieved via the enhanced recycling of funds deployed. It has been suggested that the initial funding could be reused 2-3 times over a 10 year period with scope for increased leverage of private sector funding from a wide range of sources including pension funds, equity houses and sovereign wealth funds.²⁰

Community engagement

If Australia is going to succeed in getting the community on board to user charges/value capture, we need to rebuild trust and the Gold Coast and Manchester examples demonstrate the vital role of grass roots engagement. Looking at past experiences highlights the good, the bad and the ugly.

Sydney's road network and approach to road pricing has demonstrated that building new roads does have a productive impact on the economy (best reflected with the M7) and standard application of distance based tolling has been accepted by the community. And this is now being further leveraged with the development of the M1/M2 link by the M7 shareholders. It is a great example of building on an existing user pays revenue stream, harmonising tolls and coming up with a financial solution that mobilises funding from the superannuation sector in conjunction with reduced funding support from the State and Federal Government.

Unfortunately the critics of user charges have been fed ammunition by inconsistency in the application of such charges. Not only do we have a patchwork quilt of user charges on the Sydney Motorway Network with different toll structures and toll free segments: users on the M5 are reimbursed any tolls paid through the Cashback program. Time of day pricing on the Sydney Harbour Bridge was introduced purely for budgetary reasons with no allocation of funds towards roads.

There are also signs of real progress in the recent Federal Budget with the implementation of fuel excise tax indexation (acts like a user charge as linked to km travelled) with proceeds hypothecated under legislation to new investment in roads. A further example is the commitment of funds to the \$1.6 billion freight link to the Port of Fremantle using a toll. This toll is a first in Western Australia. Specifically this toll will only apply to heavy vehicles (also a first in Australia) and provides further evidence that the trucking industry can step up and contribute towards the funding and maintenance of road infrastructure.

Conclusions

The overriding fix of the infrastructure funding challenge has to be to engage with the community and build trust around the difficult concepts of user charging and value capture. The time is right now to break the nexus by using the capital available to super funds to invest so that the long term revenues generated from infrastructure investment flow back to the community. This solves the timing issue. There are tried and tested tools to build efficient infrastructure investment markets. This is the time to be bold and have a long term vision. Australia has the opportunity to regain its position at the forefront of the global infrastructure investment market.

4 FUNDING INFRASTRUCTURE: TAX AND AVAILABILITY CHARGES (JON HICKMAN)²¹

Introduction

The discussion around funding infrastructure in Australia has to date largely focussed on 'hard' infrastructure, particularly additions and improvements to roads and public transport. There has been relatively little discussion around the challenges involved in financing the protection and enhancement of our natural and 'heritage' infrastructure – our parks and our coast particularly – in the face of increasing population and visitor numbers and the impacts of climate change.

We have, as a community, appreciated the importance of sustaining 'liveable' cities. Our parks and public places, our heritage buildings, and our coast and harbours make as much, and arguably more, of a contribution to our liveability as our roads, public transport, communications (and other utility) infrastructure. However the principles behind good financing arrangements for 'hard' and 'natural' infrastructure are the same.

With road or public transport improvements there are immediate beneficiaries (travellers) who will enjoy the benefits of faster, easier journeys. There will be local beneficiaries whose property prices and amenity will be enhanced because of the improvements. The broader community also benefits: for example, through a reduction in pollution as a consequence of modal shift or less congestion. Good public finance would have all beneficiaries paying a fair proportion of the cost of such improvement.

On the coast a particular engineering intervention might protect private land from the impact of sea level rise, protect local streets and parks for the local community and beaches and the extended coastal environment used by the broader community. The same principle of good public finance should apply.

The challenges are identifying the proportion of capital and operating costs to be allocated to the various classes of beneficiary, designing appropriate mechanisms to collect the beneficiaries' contributions, and distributing these to infrastructure operators and their financiers.

The coast of Melbourne as a case study

Melbourne's bays and coastal environment form an important element of its character. It sustains important passive and active recreation opportunities and is home to land and marine-based species.

With Melbourne's population forecast to increase by 2 million people over the next 25 years, the coast around Melbourne (Port Phillip and Westernport Bays including the Bellarine and Mornington Peninsular areas) is and will continue be subject to environmental pressure because of increased resident and visitor numbers, together with the impacts of climate change. Whilst the coast moves with the influence of tides, wind, waves and weather systems, growing visitor numbers and the impacts of climate change will exacerbate existing and create new pressures on the coastal environment.

Substantial outlays will be required to upgrade and relocate existing hard infrastructure (roads and drainage systems for example), to protect coastal features (estuaries, saltmarshes and

sea-grasses), to install new facilities for active recreation and to protect and potentially acquire new areas for passive recreation (as a consequence of erosion).

Private/local/broader public benefits

Dealing with this set of issues raises all of the complexities of funding public infrastructure in a politically challenging environment.

It involves both state and local government owned infrastructure, immediate private beneficiaries (nearby landowners whose private assets might be protected), providers of telecommunication, gas, electricity and water services, local community groups, more distant users of coastal facilities and the general population of Melbourne, who – the research tells us – value highly the coastal environment.

The array of public and private beneficiaries and the extent of their benefit will differ, depending on whether the potential projects are protective of private and/or public sector assets, recreation facilities or coastal amenity and biodiversity. Some benefits will be relatively easy to measure and value, others will be more complex. Some beneficiaries will find it relatively easier to pay, others will have more difficulty.

Gap between project costs and what private beneficiaries can pay

In coastal, as in other infrastructure projects, the capacity of private beneficiaries to pay for the full cost of a project will often be limited. But some proportionate contribution should be negotiated. This is potentially an easy 'starting point' for funding. However in other situations a project with an economic or social benefit is not the same as a project generating revenue so that it is financially viable and generates a cash flow to service the debt or equity associated with the project.

Availability of a beach, or less pollution or a reduction in congestion may be valued, but for economic or social benefits to translate into financial viability someone has to pay! Economic and financial benefits are not the same; project lenders need financial returns, not economic returns to acquit their responsibility to their stakeholders. And, to the extent that a project might enhance 'productivity', the financial benefit of this increased productivity will not flow directly to the project sponsoring entity. It will largely pass through to the Commonwealth as higher tax payments.

Difficulty of paying contributions from state budgets

These circumstances demonstrate one of the reasons for the difficulty of financing infrastructure projects from state budgets. State revenues will not necessarily grow to match outlays (maintenance interest and capital redemption charges) on social or economic infrastructure.

Given that states are reliant on Commonwealth distributions for substantial amounts of their revenue (40% in Victoria), and face the challenges of an aging population and being locked into Commonwealth spending priorities through 'matching' requirements in areas such as disability payments and education expenditures they are understandably cautious about adding substantially to long-term non-discretionary debt servicing obligations.

Trust in governance

The simple answer to the project financing conundrum is, of course, for the relevant government to 'pay' for the economic or social benefits related to a project and use its taxing power to generate the dollars required to service the related debt (or better, to finance such projects from revenue). International comparisons suggest that we are not a heavily taxed community and, conceptually at least, this is the best outcome.

There is broad and strong community and political opposition to higher taxes. Perhaps because of the perceived incompetence of government in dealing competently with financial matters and the financial consequences of projects (for example the design of the mining tax, the NBN, the desalination project in Victoria, and the 'education revolution'): the community does not trust government to spend money wisely!

However, we are seeing a number of situations where there appears to be a prospective willingness to pay a tax (or charge) provided the revenue raised is dedicated to a particular purpose (hypothecated). The addition to the Medicare Levy to fund (in part) the National Disability Insurance Scheme is an example of an increase in a government tax associated with a particular outlay being generally accepted. The most high profile recent example of this apparent willingness to finance particular expenditures is the suggestion by motoring organisations that road user charges might be extended to pay for improvements to transport infrastructure. At the local government level councils are charging special rates to fund particular community projects that might have been funded through general rates (for example an Environment Levy in Clarence, Tasmania and a Youth Centre in Playford, South Australia) without the objections that would arise if general rates were to rise to fund the same project.

Potentially hypothecation might be a basis for increasing government revenues associated with outlays that are seen to be warranted by a broader community that does not trust the government to manage its financial affairs capably! In an urban setting this might be road user charges to pay for road improvements, or a congestion tax on road users, to help fund public transport.²²

Who, how much and how to pay

In a (hypothetical) situation where private beneficiaries paid their 'share' of the cost and government funded the share of the cost related to broader economic and social benefits the challenges of funding (for example) a road project would be to (i) identify and put a shadow price on the benefits of reducing congestion, vehicle emissions etc, (ii) specify who the beneficiaries are and (iii) decide how the funds could be collected. Such an approach would require a robust and defensible assessment of how the benefits of particular projects would be distributed, something that is not beyond the capacity of governments to undertake.

In Victoria recent work in relation to financing of water levy banks has implicitly taken this approach. Another example of such an approach is the work of the Panel that reviewed funding for the 'renovation' of the infrastructure at Patterson Lakes, a residential canal development south of Melbourne.

Distribution analysis

If 'users', particular local beneficiaries and the broader community are to contribute to the cost of a project the issue becomes which costs should they contribute to - capital and/or operating costs? A further issue is to determine what a 'fair' share of the cost is for each class of beneficiaries. An element of a thorough Benefit/Cost Analysis of a project is a Distribution Analysis, identifying how the benefits of a project are spread across the community of beneficiaries.

It is a complex task to identify and assign values to the benefits of a particular project, to identify the beneficiaries and design cost-effective ways of monetising the value of benefits. It is not the intent of this chapter to go into these issues. However there is strong literature on, and good examples of, such analyses being undertaken. Often the 'value' of infrastructure will be evident as a consequence of changes, or likely changes, in asset values (land and buildings). As there are already systems in place for collection of property-based taxes and charges there is obvious sense in using these systems where this is the case.

Land-based revenue collection systems

There is a long history of property-based taxes being levied for projects and purposes that provide a particular benefit to properties. To the extent that a property valuation reflects infrastructure amenity it can be reasonably argued that property valuation is a fair basis for cost recovery. For example valuations in older metropolitan areas, better served by roads and public transport, hospitals, schools and other public services will have that amenity reflected in their property valuation. Property values in outer areas, not so well served by public amenity, will have lower valuations.

In Melbourne, a number of land-based taxes have been imposed over the years to finance capital and/or operating costs of particular projects or facilities. For example, funding of the Melbourne Underground Rail Loop was partly through debentures with the State Government paying 60% of the cost, while a special city levy payable by land-owners in the Central Business District of Melbourne from 1963 was to fund the remainder. The levy was to last for 53 years, but was ended in 1995.

Again in Melbourne a Metropolitan Improvement Levy Charge is collected every year on behalf of the Department of Environment and Primary Industries. This charge has been included on the water, sewerage and drainage bills of residential and commercial properties since 1958. The charge is calculated by applying a rate to the Net Annual Value of the property and is only payable on properties with the area that was administered by the Former Melbourne and Metropolitan Board of Works. A minimum charge applies for the majority of ratepayers. In 2013/14 the charge is estimated to raise \$141 million. Funds raised go to Parks Victoria, Zoos Victoria, the Royal Botanic Gardens and the Shrine of Remembrance for the development, management and maintenance of metropolitan parks, gardens, trails, waterways, and zoos.

Victoria also imposes Land Tax on land that is not occupied by a taxpayer's principal place of residence and levies Stamp Duty on land transfers. These property taxes fall on both commercial and residential property. However, Land Tax is not payable by most

householders; while Stamp Duty is a 'one-off' charge paid by the purchaser of a property. In 2013/14 these two sources of revenue are estimated to raise \$5 billion for the Consolidated Fund, around 30% of all state taxation revenue.

The local government rating system

Local government rating systems use property valuations as a basis for distributing 'residual' costs (i.e. net costs after deducting other revenue streams) over properties within a municipality. Net costs will, of course, be based on many factors related to council efficiency, the range of council activities and other revenue streams particular to a municipality. Council rates, under current systems, do not include an element related to the non-council activities that contribute to the relative valuation of a property. Also, there is no 'test' of the relative equity of council rates across municipalities. Residents in a mature neighbourhood, with good access to roads, schools, hospitals and public transport are likely to pay a substantially lower proportion of their property value as 'rates' than residents in newly developing metropolitan areas much less well served; an outcome inconsistent with 'good' tax policy.

Conclusion

Direct user charges will often not cover the cost of operating and financing infrastructure, particularly 'soft' infrastructure directed toward sustaining and enhancing the quality of life in our cities, and protecting and enhancing environmental assets that provide benefits to the broader community. Traditionally it has been the role of government to fill this funding gap, but this is becoming, and will become, more difficult for it to do so as our population ages and the community is unwilling to pay higher rates of tax. There is both historic and emerging evidence that communities are prepared to pay to finance specific infrastructure that they value.

An option for closing funding gaps that emerge in relation to infrastructure projects might thus be the imposition of a broader range of 'beneficiary pays' arrangements. Winning community acceptance of this approach will require robust approaches to identifying firstly the 'value' of benefits, secondly the community of beneficiaries, thirdly the basis for allocating the 'value' across the 'community' and finally implementing mechanisms for collecting revenue from the range of identified beneficiaries.

Valuing the benefits is not a complex task. This should be a routine part of the cost-benefit analysis that underpins any decision to proceed with a project. Identifying the community of beneficiaries and allocating of benefits of a project across that community is a conceptually easy (but potentially politically complex) task. Yet distribution analysis is not a new art and the expertise exists to both undertake a valid distribution analysis and engage with the community throughout that process, including sharing the findings of that analysis. A practical, and equitable, approach to collecting revenue (over and above user-charges) from beneficiaries would be to make greater use of property values. Property values could be used as a basis for collecting special rates or charges for properties that receive an immediate or local benefit and for distributing the value of broader benefits across the broader community.

5 FINANCING INFRASTRUCTURE (ROBERT NICHOLSON)²³

Introduction: barriers to infrastructure investment in Australia

There are virtually no projects proposed for the public infrastructure space where third party user charges can service all capital and operating costs. Up-front capital investment from Federal or State governments or ongoing revenue support is needed to deliver them. Given the limited capacity of State and Federal governments to allocate funds to infrastructure, we have to find ways to either raise funds by means other than user charges or government outlays or reduce project costs so that the available funding can be stretched further.

The chapters by Martin Locke and Jon Hickman have addressed the many opportunities to raise funds from other public charges levied on communities that will be benefit from projects. It is critical that more progress is made in this area. The chapters by Christopher Selth on processes for infrastructure delivery and by Gordon Noble on the superannuation fund perspective have also addressed the potential to reduce costs by improving project planning and tendering processes and exploring ways to reduce the high cost of construction and risk of cost blow-outs associated with labour market conditions.

This chapter seeks to explore avenues to reduce the costs of financing greenfield projects. These form a considerable component of the total cost of delivering a project.

Financing models

Models which have so far been developed to assist private sector financing of infrastructure include those set out in Figure 3.

FIGURE 3: INFRASTRUCTURE FINANCING MODELS

Model	Advantage/s	Impacts
Government develops the project and then seeks to sell the asset to the private sector when complete – e.g. the \$10 billion WestConnex tollway project and \$1.9 billion Sydney desalination plant	Potentially lower cost to government	Increases state debt and potentially impacts credit rating State retains construction and revenue risk
Capital contributions by governments to meet part of the construction cost and reduce the need for debt funding – e.g. the Sunshine Coast University Hospital (\$1.8 billion construction cost, \$820 million capital contribution), Victorian Comprehensive Cancer Centre (\$1 billion construction cost, \$300 million capital contribution)	Can be used where insufficient economic private finance available	Increases state debt and impacts credit rating State may also retain an element of construction and revenue risk
Direct provision by government of all or a portion of project debt, subordinated to senior lenders - e.g. \$1.1 billion South East Queensland Schools Project (70% of the debt funding at the operations phase)	Still passes construction risk to private sector, but takes advantage of Government's ability to raise debt at lower cost than private sector	Increases State debt Introduces intercreditor complexities
Provision by government of project loans on attractive terms such as those provided by the US TIFIA program or European Investment Bank. Used for Capital Beltway Hot Lanes, Miami Intermodal Centre, Intercountry Connector Other government programs can also guarantee project debt - the UK Infrastructure Guarantee Fund allows Treasury to provide guarantees to support infrastructure project debt (as well as loans or other commitments) up to £50 billion. Used for Drax conversion to biomass and earmarked for Northern Line extension, Thames Tideway Super Sewer and Mersey Gateway toll bridge Swedish Debt Office can also guarantee infrastructure project debt (e.g. Oresund Bridge between Sweden and Denmark)	Reduces financing cost and may provide access to capital which is not otherwise available	All structures mentioned are fully funded or are recourse to government and therefore usually increase state debt and would be taken into account in sovereign ratings
Assumption by government of revenue risk by making availability payments or guaranteeing project revenue – e.g. Peninsula Link tollroad	Can be useful where the private sector is reluctant to take revenue risk. Up-front capital commitments are funded by the private sector so do not increase State debt and private sector bears construction risk	Revenue support can leave the government with substantial ongoing commitments

Sources of debt funding for infrastructure projects

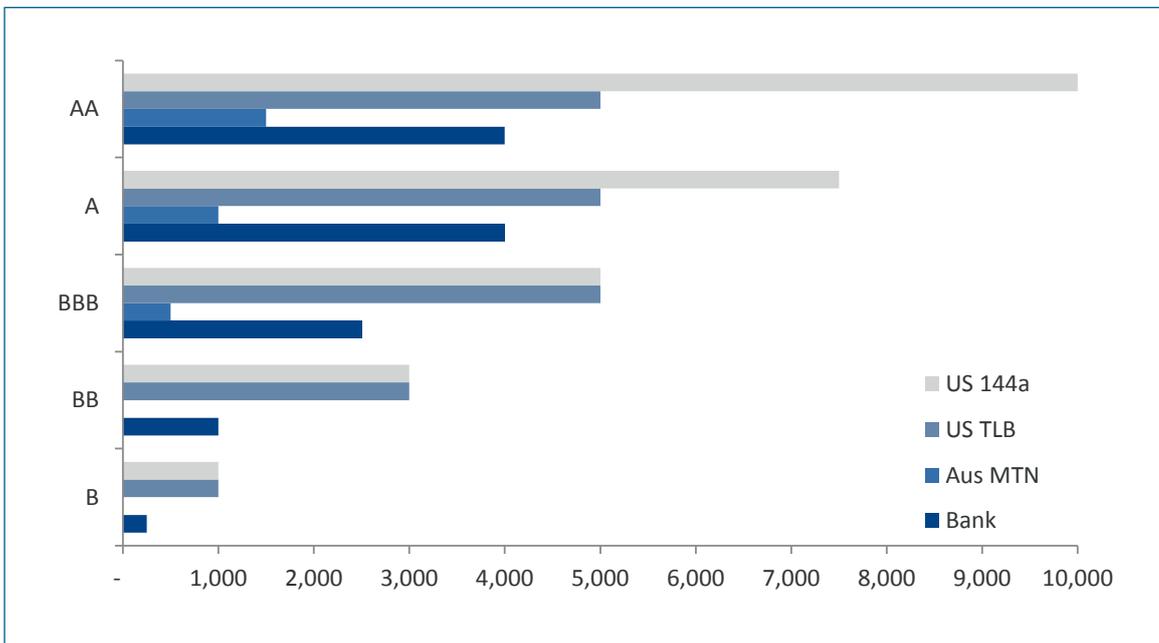
A range of factors conspire to prevent more cost efficient funding structures for Australian infrastructure projects including: total volume capacity constraints; limited availability of debt sources for construction risk credit profiles; tightened global credit markets and increased capital requirements limited domestic deposit base of major Australian banks leading to smaller individual commitment levels and for shorter tenors than international comparators;

and the poor performance of a number of recent projects due to cost overruns or construction/ramp up delays or revenue miscalculations.

The capacity of funding markets to accept borrowers of different credit quality can be indicatively illustrated in Figure 4.

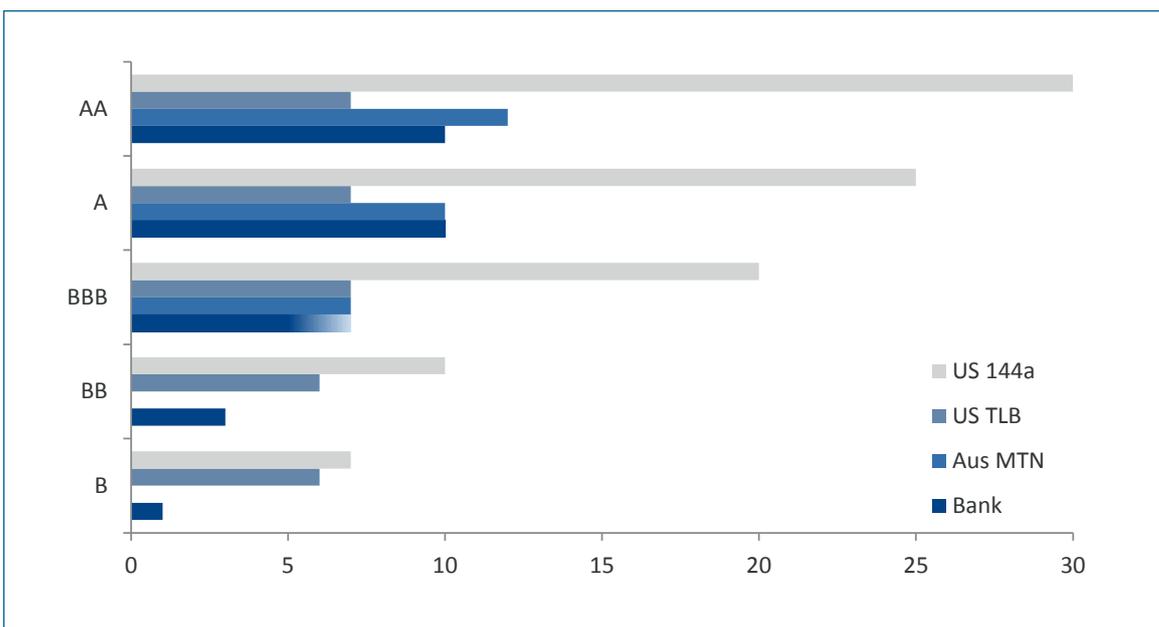
The tenors of debt that have been achieved from funding markets for borrowers of different credit quality can also be illustrated in Figure 5.

FIGURE 4: FUNDING MARKETS CAPACITY



Source: Grant Samuel (2013)

FIGURE 5: DEBT TENORS



Source: Grant Samuel (2013)

Benefits of developing investment grade funding structures for infrastructure projects

Credit assessments have tightened in the post financial crisis environment and even strong credit profiles require substantial risk mitigation in development and operating phases to achieve an investment grade profile. Most greenfield projects cannot satisfy these requirements on their own. To date the bank market remains more capable of digesting construction risk than other funding markets.

Financing options are greatly expanded if an investment grade capital structure can be developed. This can only be achieved once construction risk is removed and operational sustainability is secure. If development risk can be mitigated, a funding structure that achieves a strong investment grade credit rating may broaden its funding sources, accessing other pools of liquidity including markets such as US144a, US Term Loan B, domestic MTN and Australian wholesale and retail debt markets.

By having access to different debt markets and volume of debt in excess of requirements, more efficient financing structures and longer debt maturity profiles can be achieved. For example, Grant Samuel point out that the 5 year Australian corporate bond credit margin differential between A range rated issuers and BBB range rated issuers is circa 100 basis points. The 10 year differential is wider at circa 150 basis points. If this benefit can be harnessed across part or all of a project's funding structure, the savings on a \$5 billion project would be significant. For instance Grant Samuel consider that \$1 billion of credit enhanced debt could potentially realise \$50-\$75 million of annual savings.

There may be other benefits as well such as lower equity pricing; less reliance on bank debt and thus not needing to exhaust this market and incur higher marginal pricing; and creating longer project funding maturity profiles placing less pressure on refinancing risk and the associated refinancing costs.

Credit enhancement

Prior to the global financial crisis monoline insurers would regularly provide credit enhancement for development projects via a variety of forms but while few calls were made on credit enhancement obligations to infrastructure projects during the financial crisis, most of these entities have not recovered from their involvement in the subprime mortgage asset market.

Recently, there has been some evidence of a re-emergence of the monoline insurers - Assured Guaranty, for example, has provided a guarantee for bonds issued to finance the Sustainable Communities for Leeds hospital, Edinburgh University's student residences PPP and Brunswick Public Housing regeneration developments in the UK. However, we have not yet seen the widespread re-emergence of monoline insurers and, for the

moment, there is a gap in the market, which in many ways is impacting the liquidity and potential cost of project infrastructure funding.

A suitable credit enhancer can support many kinds of debt instruments. This credit support can fall away when the project achieves certain hurdles and meets credit metrics which are considered suitable for stand-alone funding sustainability or if the credit support is called upon it could convert to a loan obligation. Credit enhancement guarantees can be structured so they are limited to specific events or for a percentage of the project cost and for a defined period during and beyond construction and ramp up. Guarantees can support a junior debt position or senior debt via say a 'first loss' position. Guarantees can also be used to provide additional construction period liquidity for the project or for debt interest servicing during construction and ramp up and/ or improve the interest servicing risk profile during operations via a top-up mechanism.

Credit markets will typically apply a blend of the project's actual or assumed credit rating and the credit benefit flowing from the entity providing the enhancement depending on the level and limitations of that credit support.

How could an Australian state-owned infrastructure credit enhancement fund be established?

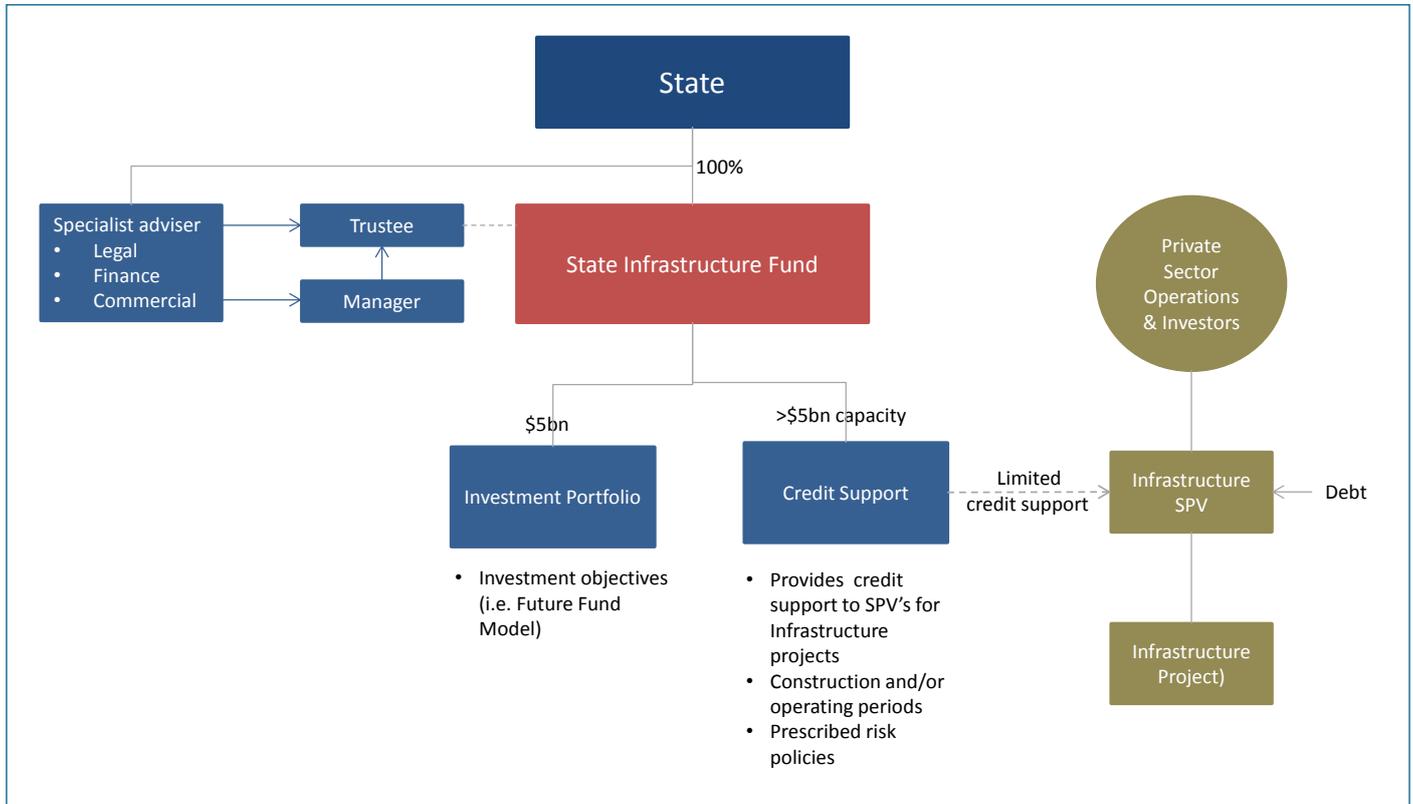
Given the deteriorating financial position of the Australian Federal and State governments, it is possible that the issuance of government guarantees could, in combination with other factors, lead to a ratings downgrade.

A separately created fund to provide credit support to infrastructure project funding structures could be established by either State governments or the Commonwealth. Some States may prefer to have the fund under their own control so as to be confident that it can be established quickly and be available to support projects within the State and not be subject to "second guessing" by the Commonwealth which has occurred in a number of other areas. A State-owned entity could be established as a separate body under its own legislation, similar to the Future Fund. Legislation would seek to "future proof" the fund so that future governments could not raid it for projects outside the express criteria for which it was created. The Fund's governing body would need to maintain appropriate prudential requirements consistent with the requirements of the relevant agencies to ensure appropriate levels of risk and contingency reserves are maintained.

Seed capital could be provided for the fund through the sale of an asset by the state. The seed fund would grow over time through prudent investment and by earning funding or guarantee fees.

The Fund's structure and operation is illustrated in Figure 6.

FIGURE 6: POTENTIAL STRUCTURE OF A STATE-OWNED INFRASTRUCTURE FUND



How would such a fund operate?

The Fund would focus solely on providing credit support to capital structures of major eligible infrastructure projects. It would be different to other international comparators established to help finance infrastructure projects, including TIFIA, EIB and the UK Guarantees Scheme, principally by not having recourse to the State, thereby not adding to State debt or weighing on the State's credit rating.

The Fund would have clear criteria for the deployment of its resources, such as recognition of the project by Infrastructure Australia, project size and credit metrics, maximum exposures to particular projects or credits, number, size and diversity of exposures and probity arrangements (e.g. how the Fund would engage with bidders for a project). Seed funding would be applied to support the infrastructure credit support obligations which may be a multiple of the fund's asset base depending on factors such as investment criteria, rating agency treatment and prudential requirements. The granting of credit support could potentially be applied to any eligible infrastructure project procured through the traditional PPP model (e.g. projects above a certain capital threshold which are considered likely to benefit from private sector innovation and compare favourably on PSC measures).

While the key objective is to widen access to sources of finance and to minimise overall funding costs, the Fund would also generate revenue from the investment of its seed capital and credit support charges.

How would the fund's operations impact on the State's credit rating?

As this model has not been instituted before in precisely this form, the manner in which it and its sponsor State would be assessed by credit rating agencies has not been tested.

However, the Fund would be expressly established as a statutory corporation without the benefit of any State support. All credit support would be granted by the Fund on the express basis that the State does not support the Fund's obligations and the recipients of the Fund's credit support would have recourse only to the Fund. In these circumstances, we would expect that the obligations of the Fund would not detract from the State's credit rating and may enhance it through the positive impact on the development of critical infrastructure.

Does this model still make sense for projects which do not deliver significant user pays revenue?

Most of the infrastructure projects which Australian governments are seeking to deliver will not deliver external revenue sources sufficient to service equity and debt – for example, Victoria's Infrastructure Australia submission includes a \$9 billion metro rail project, regional rail connections, level crossing removals, existing highway duplications or town bypasses and rail signalling upgrades.

If the state wishes these sorts of projects to be delivered by the private sector, it will need to write concession agreements which provide ongoing financing from the state budget or other hypothecated revenue sources for the life of the investment (say 20 years).

A material reduction in private sector financing costs for these projects would materially reduce the State revenues which are required to service the project and allow the State to fund more projects than it would otherwise be able to support.

Would the Fund still be needed if other market mechanisms emerge to fulfil a similar role?

It is possible that monoline insurers will re-emerge to the point where a Fund of this nature may no longer be required. At that point the Government which established the Fund could look to sell the Fund.

Assuming no calls have been made on the Fund, it should be worth considerably more than the initial seed funding through the investment of its capital and its credit support fees.

Comparison to TIFIA and other international models

To understand our proposal further, it can be helpful to compare it to existing international models of state infrastructure funds in two examples: the European Investment Bank and TIFIA (USA).

European Investment Bank

The European Investment Bank was formed in 1958 and is backed by the 28 EU member states. It provides relatively small but important elements of a project's debt requirements by way of subordinated loan or cost over-run facilities. This reduces the risk and cost of senior facilities. The Bank has also issued guarantees, such as the recent £46 million guarantee of bonds issued by Great Gabbard Offshore Transmission Link. The EIB has a AAA rating and a strong technical and financial analytical capability. It raises funds from its own bond issuance. Various European countries have established their own funds which operate in a similar manner.

TIFIA

The US Transportation Infrastructure Finance and Innovation Act established TIFIA in 1998, administered by the Federal Department of Transportation (DOT). While it is empowered to issue guarantees it has largely simply made very low interest loans to transport infrastructure projects with tenors up to 35 years. Each year DOT determines its "subsidy" of such loans by estimating non-recovery and operating costs. These must lie within boundaries authorised by Congress (\$750 million for 2013 and \$1 billion for 2014). However, the full amount of the loans (up to \$7 billion in 2013 and \$9 billion in 2014) are made by DOT. The loans are only ever part of a project's needs but are often subordinated to other lenders.

TIFIA is not authorised post 2014 and the Obama administration has been considering whether to extend it or replace it with an "infrastructure bank" concept which would be a stand-alone entity the obligations of which could be off the government's balance sheet. The bank could be capitalised by government initially (\$10-25 billion has been canvassed) but it could also issue its own bonds which could potentially be tax advantaged.

Around 30 US States already have "infrastructure banks" however they have not been well capitalised and are yet to make a major contribution to the national infrastructure task. The fears of the federal "infrastructure bank" include the traditional federal vs state funding control battleground and political favouritism. The same

concerns in Australia might tend to favour the establishment of State-based Funds.

Our model

The Fund advocated in this chapter is similar to the "infrastructure bank" model in that it would have its own seed funding but be non-recourse to government. Like the EIB it would establish a strong analytical capability but it would provide support principally in the form of guarantees or critical elements of the debt stack which are difficult to place in the market.

Its credit enhancement would be provided on commercial terms which reflect the risk of the capital provided and not have any element of subsidy as is the case with TIFIA. If government wishes to provide separate financial support for projects this would be through transparent grants or availability charges.

Conclusion

We consider that a Fund of this nature has the potential to become an important pillar in the delivery of infrastructure investment in Australia. Herbert Smith Freehills presented the concept to the Productivity Commission in a submission we made with the assistance of Grant Samuel.

In its draft report the Commission recognises some of the challenges we identified in financing infrastructure projects but is reluctant to support the concept of a state establishing a vehicle to support the financing of projects. They point out that states do not have a good track record of providing financial services as the ghosts of the State banks would testify (although we would argue that the Future Fund has since demonstrated that well-conceived models can be successful. The Commission also considers that, if a financial intermediary role of the kind we say is largely missing made sense, the private sector would step in to provide the relevant services.

We agree that governments should not provide services that the private sector is able to provide efficiently. However, we argue that the trauma inflicted on this particular sector by the global financial crisis has meant that it is still not positioned to resume the vital role that it had played before the crisis. It is essentially an example of market inefficiency which could be readily addressed by the state for so long as required (perhaps 5 – 10 years).

6 PROCESSES FOR INFRASTRUCTURE DELIVERY (CHRISTOPHER SELTH)

Introduction

Despite significant technology advances in the last decade the processes for infrastructure delivery have hardly changed. Therefore the challenge is to leverage the technology advances so as to improve the processes to engage the community and manage existing infrastructure, identify new projects, design and deliver at the lowest cost, so as to provide significant benefits to the community and investors. Not only are productivity dividends to the community and investment returns increased on specific projects, the range of choice of potentially viable projects is increased. This is critical to gain the best quality outcome on any infrastructure investment strategy. Furthermore, these process improvements will significantly improve transparency, raising not only the level of community trust, but assisting the community's capacity to drive localised opportunities complementing larger scale initiatives from the centre.

Again it is beyond the scope of this chapter to consider in depth the many steps that could be taken to engineer these improvements. These have been detailed over many reviews, and most significantly in the time frame of this document by the Productivity Commission (2014). Rather than reproducing that work, it is more appropriate to draw out some implications for the central elements of the proposals made in this report: underwriting an improvement in the scale and quality of infrastructure investment by boosting community engagement both at the localised level with the centre, by strengthening belief in the soundness of processes, by delivering value for money, underwriting an expansion in funding, and lowering the cost of financing. Strengthening these processes does not just improve capacity to act from the centre; it enables initiatives at the community level.

As a starting point, the Productivity Commission (2014) details broad benefits of strong operation of these processes. We accept these, but suggest that an appropriately resourced structure to co-ordinate, administer, and support these processes would mean that these benefits would be derived not just by current centralised infrastructure delivery, but to processes implemented at community level. Furthermore, these processes need to actively incorporate and embody the new structures, engagement capabilities and tools driven from new technologies, now marbling through all traditional structures. Also the way we measure productivity needs to be addressed to take into account the fact that we have moved into the digital world.

Process issues can be divided loosely into two categories consistent with our recommendations: good governance; and improvements in cost of delivery, driven both by good governance and transparency, complementing improvements in physical processes. These inter-related areas will dramatically benefit from the application of new technologies, improving physical outcomes, and community engagement at all levels of these processes.

Good governance

Good governance speaks to the application of best practice processes in a manner that is transparent and subject to review. The discipline derived from this transparency should drive high standards of delivery, at low cost. It facilitates the sharing of best practice. It builds community trust, facilitating community action. Good governance and transparency represents the foundation of social capital, the most important asset in a free market economy for productivity enhancement; trust.

Funding available to a project is a function both of the project's specific and broad boost to productivity as can be captured by both user charges specific to the project, and taxes and levies that might be more broadly applied either to the locality where the project is situated, or more broadly to the national or state base. High levels of community trust consistent with good governance, including the delivery of promised benefits against performance benchmarks, will deliver the mandate to pursue a fuller array of funding options.

Figure 7, taken from Productivity Commission (2014, p.16), sets out their view of what constitutes good governance arrangements should seek to achieve.

FIGURE 7: GOOD GOVERNANCE AGREEMENTS

Good governance agreements should include:

- The principal objective of ensuring that decisions are undertaken in the public interest.
- Clear and transparent public infrastructure service standards.
- Effective processes, procedures and policy guidelines for planning and selecting public infrastructure projects, including rigorous use of cost-benefit analysis and transparency in cost-benefit assessments, public consultation, and public reporting of the decision (including a review of the decision by an independent body, for example, an auditor-general or infrastructure Australia).
- Efficient allocation and monitoring of project risks between government and the private sector.
- Use of transparent and competitive processes for the selection of private sector partners for the design, financing, construction, maintenance and/or operation of public infrastructure.
- Sufficiently skilled employees that are responsible and accountable for performing their functions.

Good governance arrangements are necessary, but to be effective, it is imperative that there is commitment to them by governments (the Executive selected from elected representatives) particularly when alternatives might be politically expedient.

Service standards

Central to the nature of infrastructure is service delivery. The social contract with the community around infrastructure must make clear expected service quality standards, how they are determined, the nature of cost to provide them, and how well these service quality expectations are being met. This information must be delivered in clear terms, and be readily available. This means that technology (for example, social media and modelling tools) should be used to engage communities fully in the infrastructure processes so as to gain their trust and support.

Requiring this information as a standard part of any infrastructure project, together with adjustment mechanisms for failing to achieve the agreed standards, not only sheets home accountability for any failure to deliver the agreed service standard, but also represents the basis for user charges and taxation structures, and for privatisation mandates.

Planning processes

The application of appropriate project assessment methodologies, and prioritisation is not just a question of civics. Selecting inferior projects imposes opportunity costs on the community. Inferior projects selection risks lowering funding options, thus raising financing costs. Lack of transparency with respect to these processes can suggest to the community projects are selected to favour particular interest groups and political agenda. Decay of trust in decision making represents a potentially significant cost in its reduction of the scope for action across all jurisdictions.

The use of cost benefit analysis

The Productivity Commission echoes the common reference to cost benefit analysis as an essential element of sound decision making.²⁴ Cost benefit analysis offers important discipline to the infrastructure investment decision making process, but it is essential that there is a critical appreciation of its usage, including its limitations, across our leadership, and the community. Without this the invocation of cost benefit risks becoming a mantra used to justify poor decisions, ultimately undermining the trust essential to the development of infrastructure.

There are several elements that are not easily captured in a cost benefit analysis. In aggregating costs and benefits, it is less easy to distribute these same costs and benefits across the community. The tool doesn't capture or handle intangibles such as environmental impacts, health, and opportunity costs and potential benefits from new business/community initiatives. The analysis tends to look only at financial dimension not the wider picture that needs to be considered when making infrastructure decisions.

The analysis faces further challenges in capturing "agglomeration benefits": the wider economic benefits that transcend the immediate impact of an infrastructure investment.²⁵ For example, the cost/benefit of improving a communications network might capture reduced costs to businesses using the network to improve processes, but it will have difficulty in capturing new business initiatives triggered by the improvement to the network. It will also struggle to capture the potential environmental, family and health benefits to the businesses, individuals and community because it enabled more flexible work arrangements.

Positive agglomeration benefits are more likely to be present over the long term. However, conservative cost benefit hence tends to skew decisions to the short term. The classic example of this is the Sydney Harbour bridge which was built with capacity massively exceeding what was needed at the time. The significant expansion of the North Shore it facilitated could not be readily captured by cost benefit.

If forecasts are unreliable, the use of cost benefit will have certain scepticism in community. Reviews of cost benefits analyses in the UK²⁶ suggest cost benefits systematically overstate benefits and understate costs. Those mischaracterisations are positively skewed with the agenda to promote or discourage an investment.

Cost benefit analysis parallels that other investment tool, discounted cash flow. These frameworks can be massaged to produce almost any outcome. As the expression goes, "garbage in, garbage out." Like financial modelling by investment analysis, the more practical use of these methodologies is to map out

constituent considerations in a systematic way allowing for scenario analysis, and facilitating certain comparisons between disparate projects. These comparisons should be made available to the community in a form that can be readily understood.

In summary, cost benefit is a tool, not the answer. It is important to remember, good investment decisions are justified by their returns, great investment decisions create them.

The choice of which projects to pursue cannot be handed over to the mechanical application of cost-benefit. Having said which public trust is strengthened by the appropriate and transparent use of these tools within a decision framework, to explain choices, and the opportunity costs of not choosing alternatives.

Cost of implementation

Whilst there is a general acceptance of these ideas, there is also a gap between these standards and what is undertaken due to a variety of factors. Some are to do with resourcing and cost. Less clear are the costs of not implementing these standards. An interesting aspect of the Productivity Commission's report is its understandable focus on larger scale practices, acknowledging that there would be benefits of boosting resources and audit trails to support the application of these practices at localised levels.

The Productivity Commission suggests availability of Federal Funding should be "conditional on compliance with a set of good practice governance principles and policy processes".²⁷ We would suggest that beyond Federal review, the application of such processes should and will become a matter for greater public scrutiny as new models for community engagement unfold.

Governance: best bid selection

Given that final bid selection relies on a disparate collection of factors including price to determine full cost, final choices will require some degree of qualitative assessment. It is appropriate that final choices be made by our elected officials, but these should be transparent, and justified.

Transparency around bid selection should be built into community engagement architecture. New technology to achieve this now being employed in other countries should be rolled out in Australia as part of commitment to moving our processes to future facing stance. The roll out of Building Information Modelling²⁸ needs to be not just accelerated, and integrated into government-community processes, it needs to be adapted to support community information and engagement.

Improvements in cost of delivery

The Productivity Commission report reviews many aspects of the cost of delivery of infrastructure in Australia. Improvements in practice would clearly raise returns on infrastructure investment. Best practice should be extended across all jurisdictions, facilitating improvements not just on large scale focus projects, but improving returns on community initiated smaller projects.

Construction costs: benchmarking cost of delivery

One perception is that construction costs have risen at accelerating rate.²⁹ What is the cause? According to the Productivity Commission it is not clear that labour is the issue. This is not to suggest that ongoing improvement in practices is not critical, but the biggest labour cost increase is "non-unionised

engineering and design services".³⁰ Land costs are significant,³¹ raising the question of practices around reserving land corridors. Materials costs have also been a significant issue,³² a corollary of mining industry crowding out. Note a high Australian dollar should drop cost of imported materials and services, but the impact does not appear material.

The Productivity Commission (2014) suggests that Australian costs may not be higher than comparable developed economies, focusing on an example of airport facilities construction costs. This raises an important issue. What infrastructure are we talking about? Mining infrastructure costs may need reference to developing economies, unlike urban infrastructure. Costs in Australia, however, are across the board those of a developed economy, with the mining boom putting upward pressure. It is also important to note that Australia's history of cost over-runs is below the international average (Productivity Commission 2014).

Productivity

The Productivity Commission (2014) notes that productivity improvement in construction has been sluggish, picking up an important national conversation. It is interesting to reference this against the low level of capital deepening in the construction sector. This suggests focus not just on input costs, but process.

Procurement costs

Government procurement looks weak compared to private sector. There have been numerous submissions focusing on these issues, such as:

*ACIF and its counterpart the Australasian Procurement and Construction Council will advocate for and monitor coordination of government and private sector BIM implementation requirements.*³³

Terms of construction contracts are said to be filled with unnecessary obligations (Productivity Commission 2014). Improvement of these specifications would not just cut cost, it would improve capacity to standardise, and realise benefits across jurisdictions. The cost of these obligations should be made clear to the community. It can be done so in an engagement process, whereby infrastructure processes are not held hostage to unrealistic expectations by certain parts of the community.

The establishment of a common procurement structure has been frequently advocated. This kind of support would further advance the capacity of local community activity as much as improving costs on larger projects.

Bidding costs

The Productivity Commission (2014) reports bidding costs as high as 1% of large project costs. There are numerous mechanisms to potentially cut that have been recommended over recent periods. For example government could explore providing or sharing certain information across tenders to reduce valueless duplication (Productivity Commission 2014).

Behind this sits the possibility of significant gains through the use of new process technologies, shared BIM frameworks. Allen Consulting Group (2010) found that accelerating the adoption of BIM in the Australian built environment sector could improve productivity by between six to nine percent. It also found that

concerted government support for the use of BIM by the architects, engineers, builders, contractors, owners and facility managers involved in a building's lifecycle would increase BIM adoption in 2025 by six to sixteen percent and produce an economic benefit equivalent to \$5 billion added to Australia's Gross Domestic Product (GDP).³⁴ While the use of BIM has accelerated globally, the US is the leader and its rate of adoption over the period 2009-2012 increasing from 28% in 2007 to 49% in 2009 and 71% in 2012 suggests even further growth in its adoption is to be expected, with evidence of broad adoption amongst the various types of players (Figure 8). As Figure 9 indicates, Australia might sit somewhere in the middle ground with respect the adoption of BIM. Behind this data, however, there are some signs suggesting roll out in Australia may be weaker than surface data suggests. As noted by David Mitchell, "Our real BIM adopt rate falls far short of what we think is happening in relation to BIM take up and real project collaboration."³⁵

A particular issue is how data is shared. Figure 10 confirms a low rate of sharing of models by design professionals with contractors. Sharing designs is critical to realising the full benefits of this technology, but it faces challenges that policy can help resolve. Without quality data the capacity to overlay BIM models on-site with Augmented Reality applications is reduced. Sharing of information through shared standards, and data libraries is critical to realising high levels of benefits. Without this, risks of various forms of liability can hold back full implementation.

FIGURE 8: RATE OF BIM ADOPTION IN USA, 2009-2012

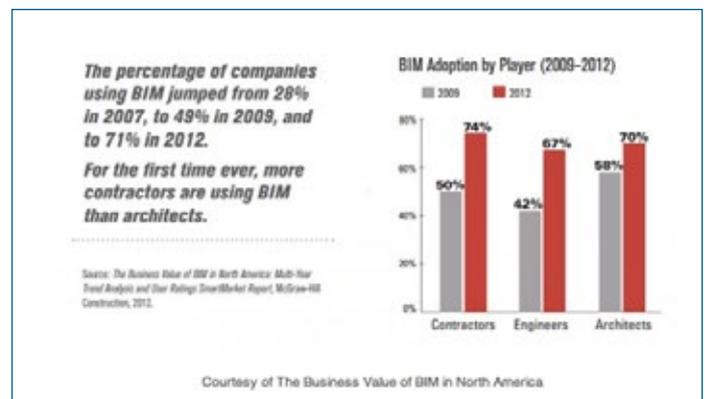
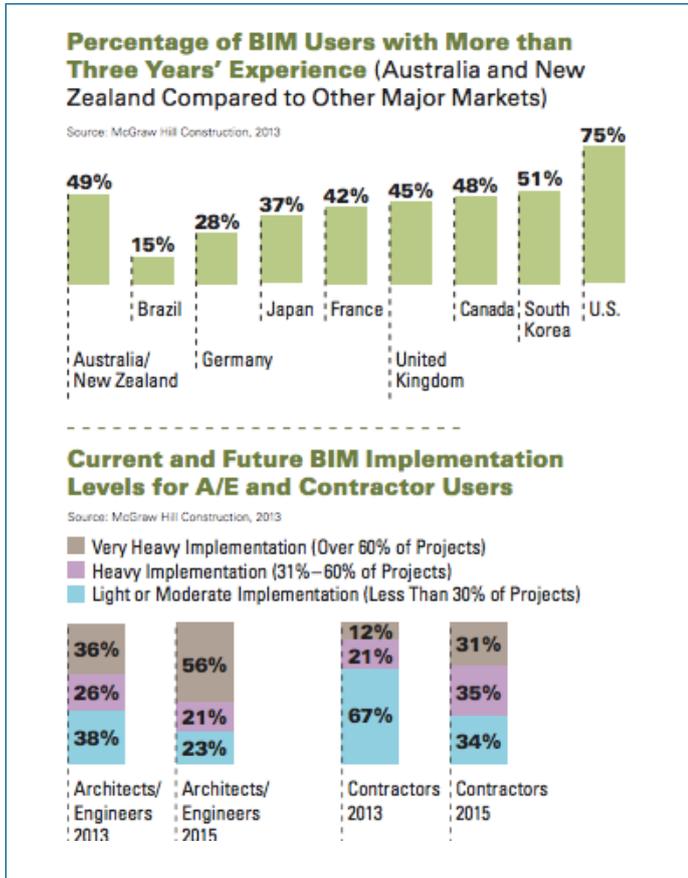
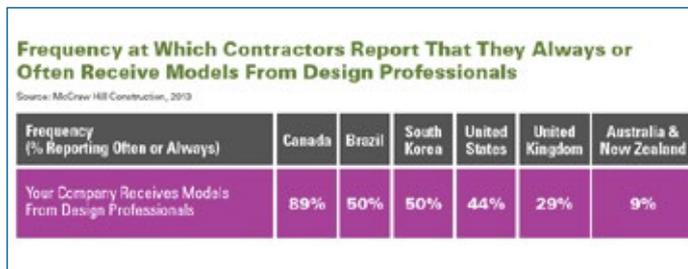


FIGURE 9: ADOPTION OF BIM GLOBALLY



Source: Bernstein (2014)

FIGURE 10: USE OF BIM FOR MODELING BY DESIGN PROFESSIONALS



Source: Bernstein (2014)

Project management

Like procurement, there is evidence of deficiencies here in government processes in Productivity Commission (2014). Again, improvements here are needed not just for large projects, but for localised initiatives.

Questions of market structure

The Productivity Commission (2014) raises the common Australian challenge of excessive market concentration. Are we introducing further biases in our selection of bids that raise costs by over weighting particular factors such as sensitivity to local conditions? European operators need mid-size players to partner with to compete with Duopoly. The development of simpler specifications and more standard processes will support increasing competition to further discipline costs at both large and smaller scale.

Impact of disruptive technologies on planning and processes

To discuss funding and financing of infrastructure, a long duration asset, and an investment in the productivity of the community, it is essential to take into consideration future looking risk factors that should impact the planning framework for infrastructure decisions, while also influencing market concerns that will determine the cost of financing.

The structure of economies, businesses, and lives are being significantly altered by snow balling technological change.³⁶ It is beyond the scope of this report to explore this phenomenon in any depth beyond speaking to a framework which respects technology's impact on the funding and financing of infrastructure. Inevitably, that framework must touch on the broader complexities of this challenge, given its significant impact on the pricing of risk in financial markets with respect to infrastructure, a long duration asset.

Evidence suggests that the nexus of politics and planning may already represent a "market failure" with respect to co-ordination of infrastructure responses, and is likely to be further challenged by the new technologies. New technologies will disrupt not just thus far untouched sectors or our economy; they will disrupt planning processes as they offer better solutions. Crowd sourced initiatives will escalate: the technology can facilitate more than just protest, but move to empowering the delivery of new solutions. One should expect growing aspects of our local spaces, and infrastructure solutions, to be crowd designed in the near future. This disruption does not represent the elimination of traditional processes, or that they are likely to remain central in the foreseeable future. They will, however, change the political dialog around these processes markedly. Community expectations are likely to be reset.

Scale of technological disruption: significant and unpredictable

The dynamics of the technological disruption we are witnessing evolve in a manner that is significantly divergent from human experience, and as such, how we frame our responses to challenges.

One of the reasons why technological change is experienced as so disruptive is because the pace of change has accelerated: productivity gains are compounding at significantly higher rates to what we have experienced in human history. Moore’s Law, for example, sees computing power at a given price point doubling every 18-24 months. The impact of these processes, relative to legacy processes, initially seems negligible. As they mature, however, the rate of growth advances on that of legacy processes, rapidly overtaking them. Legacy operators who countered these developments by tweaking their current processes early on are subsequently lulled into inaction by the relatively small initial scale of the new technology’s footprint. Cognitive biases and structural impediments also work against adopting new processes. Not only is the impact and timing of these changes difficult to estimate, responses to change induced by technology are frequently poorly coordinated.

The disruption wave is now spreading from those sectors where impact was most readily apparent, from what Deloitte (2012) calls the “short fuse, big bang” sectors, to the “long fuse, big bang sectors”, represented in Figure 11. Despite what we have seen in the short fuse sectors, the long fuse sectors have barely

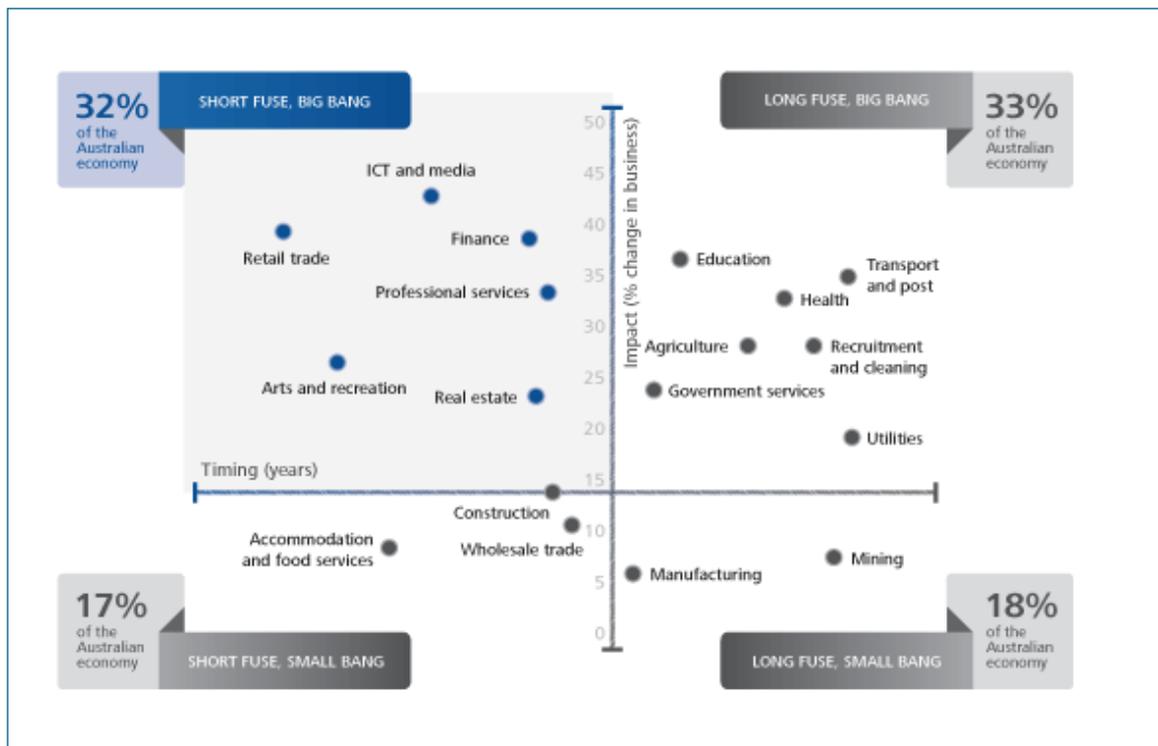
adjusted their strategies, confirming cultural and cognitive biases. The most common response even in the most obvious sectors at risk has been to circle the wagons tighter. In part, this is also due to a portion of the returns to old structures being rents, and thus frequently no longer representing entrepreneurial returns to risk taking. These sectors cannot be repositioned.

Challenges in planning during periods of structural/ disruptive change

Given that terminal values of infrastructure assets may be challenged by technological change there is some evidence of shortening of contract periods in PPPs. This evidence thus far is anecdotal and mixed. Given low interest rates, and the current shortage of assets to invest in, the pricing of deals may be distorted. Risk here is double-sided: if the community guarantees return on an asset whose utilisation declines given changes, cost can actually rise as usage falls. Recent experience in the electricity grid, discussed further below, speaks to this.

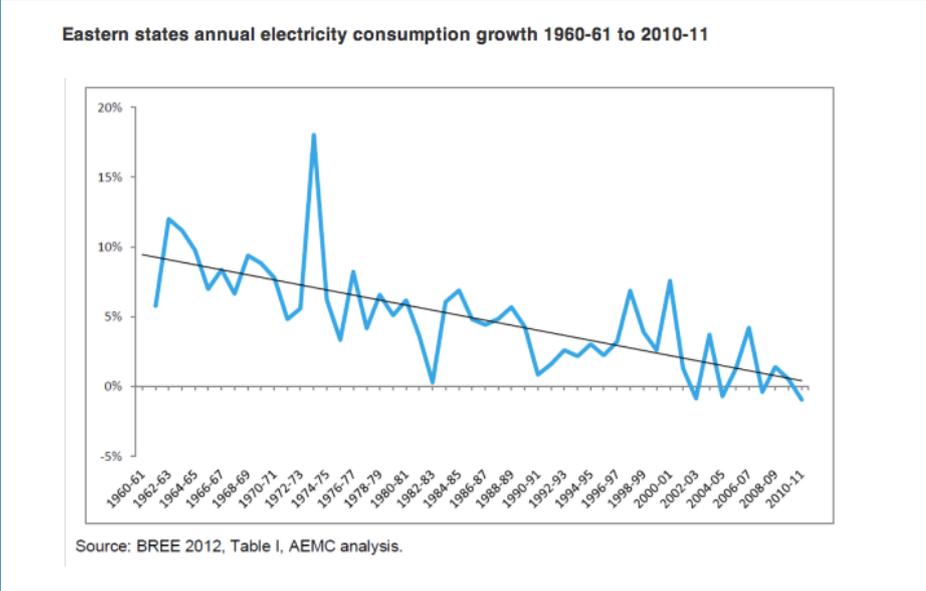
How we frame forecasts is anchored by our past experience. When we commit to those forecasts, we tend to look for evidence to support our decision, and tend to be late in acknowledging fundamental changes. It is interesting to use the example of electricity demand. Figure 12 sets out the growth in annual electricity consumption in the eastern states of Australia over the 50 year period to 2010-2011. The long term trend evident in the data is a declining rate of growth in electricity demand, although the shorter term trends appear more volatile.

FIGURE 11: AUSTRALIAN ECONOMY AND SECTOR RESPONSES TO TECHNOLOGY



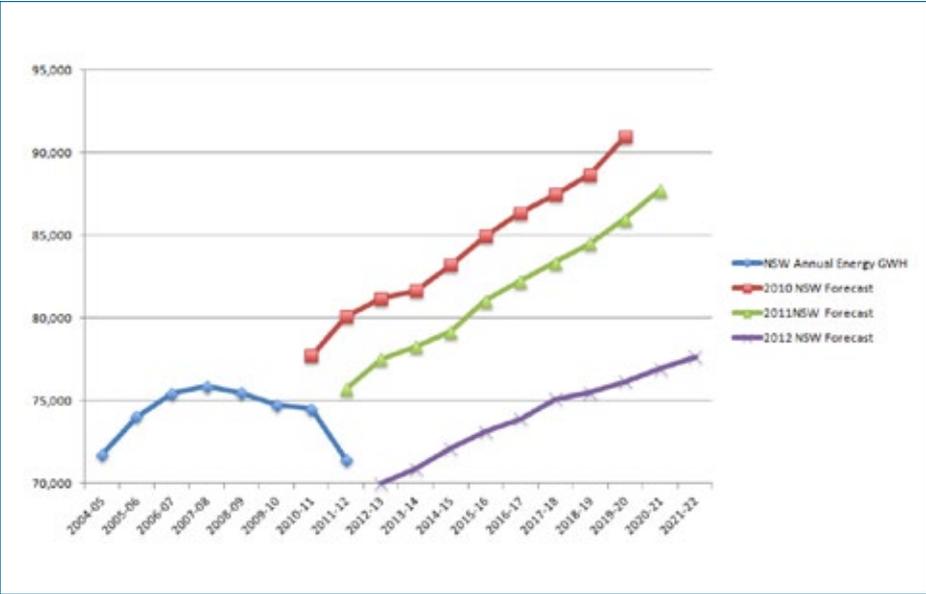
Source: Deloitte (2012)

FIGURE 12: EASTERN STATES ANNUAL ELECTRICITY CONSUMPTION GROWTH



Source: AEMC (2013)

FIGURE 13: NSW HISTORIC ENERGY DEMAND VERSUS FUTURE ENERGY DEMAND FORECASTS (MEASURED IN GWH)



Source: AEMC (2013)

It is interesting to compare this trend in the growth in annual consumption with electricity demand, to illustrate some of these system biases. Figure 13 presents NSW electricity demand data for the period 2004/05 to 2011/12 and compares this with the future forecasts of NSW energy demand, using three different years from which to project demand over ten years (2010, 2011 and 2012). All three demand predictions anticipate demand increasing year on year in a linear fashion, whereas the consumption data indicates a decline over the period to 2011/2012, consistent with the decline in eastern States' electricity consumption growth presented above in Figure 12. Leaving aside the actual demand as measured by GWH over an eight year period when choosing starting points for the 2010 and 2011 ten year models, a linear model presents the future as a steady, knowable state of growth in electricity demand. Disruptive technology does not work in such a linear fashion.

Community engagement now has new technology solutions

The interaction between politics and planning probably already represents a significant area of market failure. As such, there is also an opportunity for technology to do it better. Technological change both risks challenging our traditional centralised, cumbersome and frequently backward-looking planning methods, and providing potential answers.

New platforms are now being deployed in the United States to mobilise communities, link them up to entrepreneurs, and to government planning, to shape localised infrastructure solutions. These technologies allow citizens to move from initiating campaigns, to design and funding. In this way they move beyond other community engagement technologies deployed by government or private enterprise (e.g. mining companies) to manage the engagement task.³⁷ For community members seeking better infrastructure, these technologies enable a deeper level of engagement. It could be said that, in terms of smaller infrastructure projects, "You're the solution you've been waiting for". These rollouts are inevitable in Australia, and soon. Government could help facilitate this dynamic. Regardless it will have to prepare for the impact of these types of initiatives.

Figure 14 has three different examples of these technology solutions, with a current project using each technology described. These examples are not intended to represent the results of a comprehensive survey of such solutions. Rather, they represent three different levels of engagement: crowdfunding of a planned project; crowdfunding³⁸ and engagement on an existing plan; and development of a plan.

FIGURE 14: THREE TECHNOLOGY SOLUTIONS FOR COMMUNITY INVOLVEMENT IN INFRASTRUCTURE PROCESSES (PROJECT DEVELOPMENT AND FINANCING)

Technology	Project
Neighbor.ly	Heberlig Palmer Park Renovation, PA, USA
Citizeninvestor	Renovate Centennial Park Playground, Chickasha, Oklahoma
Crowdbrite	Dundas Street, London

Heberlig Palmer Park Renovation: an example using Neighbor.ly

The website neighbor.ly is essentially a crowdfunding platform for particular projects. The Heberlig Palmer Park Renovation³⁹ was a park renovation identified by a community group, the Carlisle West Side Neighbor. This project obtains seed funding of \$24,000 as an Elm Street Project run by the Pennsylvania Department of Community and Economic Development, a state value funding program. The community group then turned to the neighbor.ly platform to raise support; financial, labour and materials. The community has raised \$34,040 out of a targeted \$50,000.

Renovate Centennial Park Playground, Chickasha, Oklahoma: an example of Citizeninvestor

Citizeninvestor⁴⁰ pitches itself as both a crowd funding tool and a way for government to interact with its citizens on infrastructure projects. It specifically requires a government or one of their official partners to sponsor a project, with 8% of fully funded projects paid to Citizeninvestor.⁴¹ Citizeninvestor offers to break up projects into phases, so that projects can be rolled out in tranches.

Dundas Street London, Ontario, Canada: an example using Crowdbrite

Crowdbrite offers an on-line collaboration environment for public and private projects. The CB Engage solution⁴¹ is targeted at public projects and one use of this solution is to present a project visually in a canvas. Comments on the proposal and suggestions for improvements can be incorporated by virtual sticky notes that overlay the canvas. People can also endorse or comment on other suggestions. This creates real-time feedback. Other technology solutions enable on-line meetings, taking the town hall meeting out of the physical confines of the hall.

The Dundas Street Corridor Project in London, Ontario, Canada is at an early stage and seeks comments and ideas on the redevelopment of a precinct. It differs from the two other projects reviewed above for the other software in that it is not yet seeking funding but instead seeking public engagement with the early stage concept development.

What of the government-planning nexus?

It would seem unlikely that these processes replace the existing government-planning nexus, at least not in the foreseeable future. This is not how disruption functions. These processes, rather, will sit alongside the traditional process. Their impact though will be more than additive to traditional processes. They will change expectations about both old and new processes. The entire system will be impacted, not just the subset of new activities facilitated by the technology. Expectations about political processes, as well as the operational character of government are likely to be impacted. The opportunity, however, could be accelerated if community and/or government invests in the development of these architectures, rather than waiting for them to unfold.

Conclusion

Good governance and improving the costs of delivering infrastructure are not only separate processes ripe for improvement but are inextricably intertwined. Exerting better cost control increases the range of infrastructure choices available to the community. Transparency of processes increases competitive dynamics which, in turn, increases cost discipline, while also building up community trust. Weaving into this dynamic an infrastructure model which gives local communities a role in the development, funding and financing of infrastructure projects – the essence of our five proposals – adds even more weight to the needs identified by the Productivity Commission (2014) for improvements in the processes adopted by the Federal and State Governments for infrastructure delivery.

Our arguments in this chapter go further to recognise that process for infrastructure planning and delivery must also take account of new technologies. The impacts of new technologies such as Building Information Modelling on infrastructure projects are now being felt globally. Technologies such as CrowdBrite and neighbor.ly which facilitate community engagement on infrastructure projects are already being used in a number of locations in the USA and Canada to drive smaller infrastructure projects. These are variants on the basic principle of the power of radical improvements in information architectures, a power which is and will continue to be felt across all sectors of the economy. They will be applied in this space to alter the way in which we 'do' infrastructure. To inform and facilitate community expectations and needs it is vital that steps are taken to facilitate and accelerate these implementations, using shared standards. This is a core pillar to facilitate our growth goals through infrastructure.

7 COMMUNITY ENGAGEMENT: A KEY INFRASTRUCTURE SUCCESS FACTOR (KATHERINE TEH-WHITE, PAUL McDONALD AND PETER COCHRANE)

Introduction

In the current economic climate, increasing emphasis is being placed on the role and importance of infrastructure. While it is tempting for governments to attempt to rush through infrastructure projects, taking a narrow technical/economic focus is likely to backfire as communities lose patience with projects they do not feel they 'own' or if other stakeholders believe the projects will have unacceptable impacts (for example on biodiversity, perceived social and/or environmental injustices, or on local livelihoods or amenity). There are dual aspects here; it is both the sustainability of the project as well as the negotiation process used to establish agreement on what is sustainable, that are critical. Both elements lead to the acceptability of a project and therefore the ability for a project to be designed, financed and delivered with societal support.

Australians have a common ambition when it comes to infrastructure: we all want to see significant upgrades, yet we often disagree what success looks like and how we achieve it. A once-in-a-lifetime opportunity is currently emerging for a well-financed, forward-looking infrastructure agenda that has community input and support. This chapter looks at the pre-conditions to enabling that success, and proposes a model for how private, public and 'private public partnership' funded schemes can best avoid community opposition and achieve widespread support.

Past experience in infrastructure development, including decisions around strategic land use and infrastructure plans, suggests that community disagreement and its consequential delays and costs are inevitable and unavoidable. But this does not have to be the case. Adopting early engagement and decision-making processes that are transparent, inclusive and responsive to community concerns would significantly reduce the level of disagreement. It is entirely possible to move from radical disagreement to a process that not only builds community ownership of the project, but may also include the community contributing to the funding or financing of that project.

Now is the appropriate time for us to challenge ourselves to design a new approach as the potential for conflicts rises and the number and scale of projects increase. If we do not increase the degree of sophistication in our processes for building societal engagement we will find our infrastructure dreams remain just that – dreams and plans rather than a built reality.

Confronting this challenge requires government and the private sector to have a collective vision for creating, leading and embedding a new approach. Sustainable change that enables success will not be possible if governments expect the private sector to take full responsibility, or vice versa. Instead, there needs to be shared responsibility to build trust in the community by engaging in a frank and well-informed dialogue on the ambitions, as well as the particulars, for our future infrastructure.

Why change?

While there are examples of excellence in infrastructure planning and delivery throughout Australia, there are failures too. Over the past 20 years, community opposition has either stalled or stopped many infrastructure proposals and projects. The perception has often been that projects become stuck due to a range of issues, from legal to environmental - where in fact it is simply because people do not like them. When affected people are opposed to an idea and feel they are not being heard, they react emotionally and become 'outraged', using a variety of approaches to stop, stall, or change a project. Activist groups can form swiftly, gathering and accelerating community concerns and opposition outside of the formal consultative processes through adept use of environmental and other regulatory avenues, social media, and the courts. This community opposition can frustrate, delay or force projects to be reconfigured, sometimes for better, but also sometimes for worse.

Opposition can occur at project inception, build momentum through the approvals process and even carry through into construction and operation. In some cases, project financiers are targeted, in others developers. But commonly it is governments – at local, state and federal level – that are confronted with the full force of increasingly sophisticated community campaigns.

Using old school approaches to solving new school challenges

The strategy typically adopted by those involved in dealing with infrastructure opposition has included ignoring, discrediting or dismissing opponents and activists. Sometimes containment strategies are employed to try and limit activist influence, bringing even more influential people into the debate to attack or deny the activist case. More often than not, however, 'ignore, dismiss, deny or attack' strategies result in having the opposite intended effect: they help raise the profile and accelerate the level of societal engagement with an issue, enabling activists to increase the level of sympathisers to their cause.

When a majority sympathises with activists and the opposition noise hits a certain point, governments often capitulate to the pressure. For example, over the past 20 years water recycling, toxic waste siting, tunnel and dam projects met with strong opposition and did not meet their original goals. The outcome has been that some very necessary infrastructure has not been built, shut down, stalled or left unfunded. The legacy of opposition campaigns has included significantly increased costs, residual resentment, particularly in local communities, and damaged company and investor reputations. In some cases governments have had to pay large compensations as a result of reacting to community pressure by withdrawing or significantly modifying a project.

Dryzek (2002), an expert on political practice, explains that the recent increase of active public concern is part of a wider trend of deliberative democracy, in which public decisions are shaped through public dialogue among citizens. Governments (and industry) are being pushed to provide everyday people with the opportunity to participate in deliberating the decisions that affect them.

Gaining community understanding and acceptance

Community support for a project can be established successfully through well-planned and executed strategies that involve communities from the outset. The earlier potential concerns are identified and understood, the more likely mutually acceptable solutions can be agreed, costs managed and broader community opposition avoided. Anticipating the content and processes needed to drive successful engagement is key to this strategy. Opposition and outrage are often generated by a community's perceived – and at times real – lack of opportunity and loss of power in having a say in how projects are conceived, planned and delivered. It further ignites when a community feels its collective intelligence has been underestimated, overlooked or patronised.

Communities need to feel they have been heard and respected by the organisations involved in the planning, implementation and operation of infrastructure projects, and that their concerns have been addressed. Involving affected communities early in the decision-making framework, and ensuring trade-offs are mutually identified and agreed, significantly reduces the risk that decisions are contested and attract broader opposition at a later stage. However, to implement engagement strategies successfully, the required change in approach must be first understood and then supported broadly, across both the private and public sectors.

Building organisational capacity to understand and manage opposition and outrage factors and how they link to social licence to operate and societal change is essential in designing and implementing an effective community engagement strategy. It is actually possible to both anticipate and mitigate outrage, but it does require organisations to have the ability to deal with counterintuitive strategies. If there is no capacity built into the organisation to understand opposition and outrage outside of crisis situations, then it is highly unlikely that adoption of new strategies will occur in the heat of the moment when they are needed most.

Exploring a new community investment environment

To overcome community fear that infrastructure projects are being forced upon them, rather than being developed for them, it is possible to enable greater project activity at localised levels against a renewed framework of genuine community engagement. An additional benefit of this approach is that it can allow funding sources (for example, local funding pools) to be explored and potentially expanded through a new compact with communities based on trust and transparency. Financing costs can fall significantly as a result of community involvement because the level of risk is reduced. A wider array of projects could also be pursued, both at the national and state levels, for signature projects as well as smaller scale infrastructure projects where the benefits are more localized and pools of funds could become sought from, or generated by, the community that would most benefit. If the models were developed to enable individuals to invest as easily in the local market as it is in Australian or global markets, this would widen the investment options.

Facilitating such investment opportunities through improved community engagement processes could unlock a broader array of infrastructure projects, underwrite entrepreneurial activity, and boost community support. As long as this approach to financial investment is not a strategy used to combat opponents, the

approach can reduce the risk of outrage. In some communities, the offer of community investment has the strategic purpose of building ambassadors that would 'beat' opponents in the recruitment of community supporters. Such a strategy risks exacerbating division and outrage towards the project as much as the 'ignore, deny, dismiss or attack' strategies.

Growing complexity and strategic importance

Australian federal and state governments need to effectively manage a complex set of economic, environmental and social factors and provide leadership through best-practice planning that anticipates these different risks. Planning should take into account the potential impacts of different approaches and projects, consider the full range of societal actors and stakeholders, and take a long-term view. Lasting socio-economic returns should be delivered through targeted boosts to productivity and by addressing society's most important needs that have been identified in partnership with the community and industry. The implications of infrastructure delays are significant, not solely from an economic opportunity perspective, but also from a taxpayer perspective. The risk of delays will impact on financing and contracting costs. Companies from these sectors have a stake in the management of infrastructure planning. They are concerned about the risks inherent in the failure to address major infrastructure dilemmas and the test this poses for the nation's administrative bodies.

The need for engagement with communities on infrastructure is not restricted to the political arm of government or the project proponents alone. Agencies such as Infrastructure Australia and its state counterparts are tasked with developing strategic infrastructure roadmaps and priority project lists for the nation's future infrastructure needs, as well as facilitating their implementation. These agencies need to ensure that delivery of high priority projects is not delayed by a failure to identify and manage the risks of potentially negative environmental or social impacts of projects identified, not by the government or project proponent, but by the community impacted.

The implication of key trends: changing project and approval requirements

Open and inclusive planning processes are an increasingly standard expectation for governments. They are essential to generate public support for new policies and potentially controversial measures. The shift to the more participatory forms of governance is a key part of the 'new era'. This is reflected in international policy statements adopted by Australia such as the Rio Declaration on Environment and Development. Principle 10 states that governments "shall facilitate and encourage public awareness and participation". Furthermore, government devolvement of public services and the blurring of public and private spheres have stimulated the emergence of more active public interest groups demanding greater accountability and transparency.

A well-designed and inclusive engagement process can increase community support, reduce activist opposition and decrease reputation risk if it is approached in a strategic manner. Considerations in the new era include differences in culture, process, planning and communication to improve how major infrastructure projects are decided upon, structured and financed.

Six core elements to reduce infrastructure project risk

A Futureye analysis of successful and unsuccessful projects indicates that embracing six core elements within infrastructure development strategies will substantially reduce infrastructure project risk:

1. Buy-in begins with strategy and culture.
2. Engagement and communication needs to be layered for transparency.
3. Trade-offs need to be determined in collaborative multi-stakeholder processes.
4. Implementation needs to begin at the foundation of the decision.
5. Relationships need to be developed and maintained.
6. Legacy needs to be of value.

It is important to execute these elements in the right sequence through the lifecycle of a project.

1. Buy-in begins with strategy and culture

To create community buy-in to infrastructure, the first step must be to ensure there is a 'social licence to operate' mindset in the proponents of the project and that this is reflected in the strategy and culture. The benefit of such a mindset is that it enables a strategy and culture that addresses not just the technical issues, but also the emotional issues related to the project. The strategy needs to create alignment between all units and areas within an organisation to understand the strategy and its context, in order to develop and deliver a consistent approach to resolving, engaging and communicating about community concerns within the organisation (and if relevant, within and between multiple organisations, including between levels of government). Ideally, the internal alignment element should be put in place first.

2. Layered engagement and communication

Delivering the strategy requires layering the communication and engagement in a certain way and at certain important milestones. It requires the engagement process as well as the content to reflect the needs of the audiences for which they are intended. While society today may be more demanding of involvement, there is also evidence of 'consultation fatigue'. In such an environment meaningless engagement can be at best a waste of time and at worst counterproductive or even damaging. The first and most important step is to understand who needs to be engaged and what level of engagement is being sort. The appropriate processes and content are then developed (Figure 15).

The second layer of communication required is to make the process of engagement and involvement completely transparent and navigable for all potential stakeholders: people who are highly involved or attentive to the issues, those interested to learn more as well as the general public. The objective is to ensure that all stakeholders understand how they can become involved in the engagement processes should they chose to, rather than simply being told a process is taking place. While not everyone may choose to participate directly, communications still need to give people a sense of what matters and why, what is and what is not resolved and why, and what is being done to resolve it.

Rapid changes in information technology capacity and reach also facilitate deeper and more effective community engagement in project planning, identification and delivery as well as the issues in and around the project proposition. Technologies like Building Information Modeling, crowd design and funding platforms for community driven initiatives being utilized in the USA, and the WikiCurve platform for engagement on complex issues, will enable more people to engage meaningfully and reach a consensus on better infrastructure.

The Productivity Commission (2014) recommends a number of process improvements to enhance infrastructure delivery. These improvements, if matched with a drive to support localised infrastructure initiatives, will empower community action and involvement. More standard processes, for example, allow local investment opportunities to be comparable and competitive with those of other localities, as well as global investment opportunities. Introducing these standards requires adequate resourcing of both process oversight and community engagement at all stages of infrastructure development, including, at the outset

3. Trade-offs need to be determined in collaborative multi-stakeholder process

This element involves working closely and collaboratively with all key stakeholders to build trust by understanding and responding to underlying interests and values and integrating these into project design and implementation. Trust needs to be established at the outset: it is cumulative, costly to rebuild, and very difficult to introduce at a late stage. When concerns or differing expectations are identified, they need to be considered through multiple stakeholder perspectives and interrogated in a way where all parties understand and accept each other's positions before agreeing to the trade-offs. The approach as well as the outcomes can then be communicated

4. Implementation needs to begin at the foundation of the decision

Implementation of a social licence to operate needs to begin before any infrastructure decision is being contemplated. This ensures that insights from the community are taken into account, potential pathways for resolution are identified, and it allows the community to feel it has genuinely been consulted. Engagement about a decision after it has been made does not lead the community to believe it has been consulted; instead it feels it has been told. Consistent approaches build trust throughout the process. Genuine proactive engagement with stakeholders and local communities can prevent opposition from germinating, and if undertaken properly, avoid activist activity. To do this, it is important to enable the implementation team to have authority to either negotiate with the community or escalate issues to be handled by authorised decision-makers to be resolved as soon as possible, therefore constantly defusing the risk of opposition. The benefits of early action in project approvals are demonstrated in Figure 16.

FIGURE 15: STRATEGIES FOR REACHING MEMBERS OF THE COMMUNITY BY LEVEL OF INTEREST

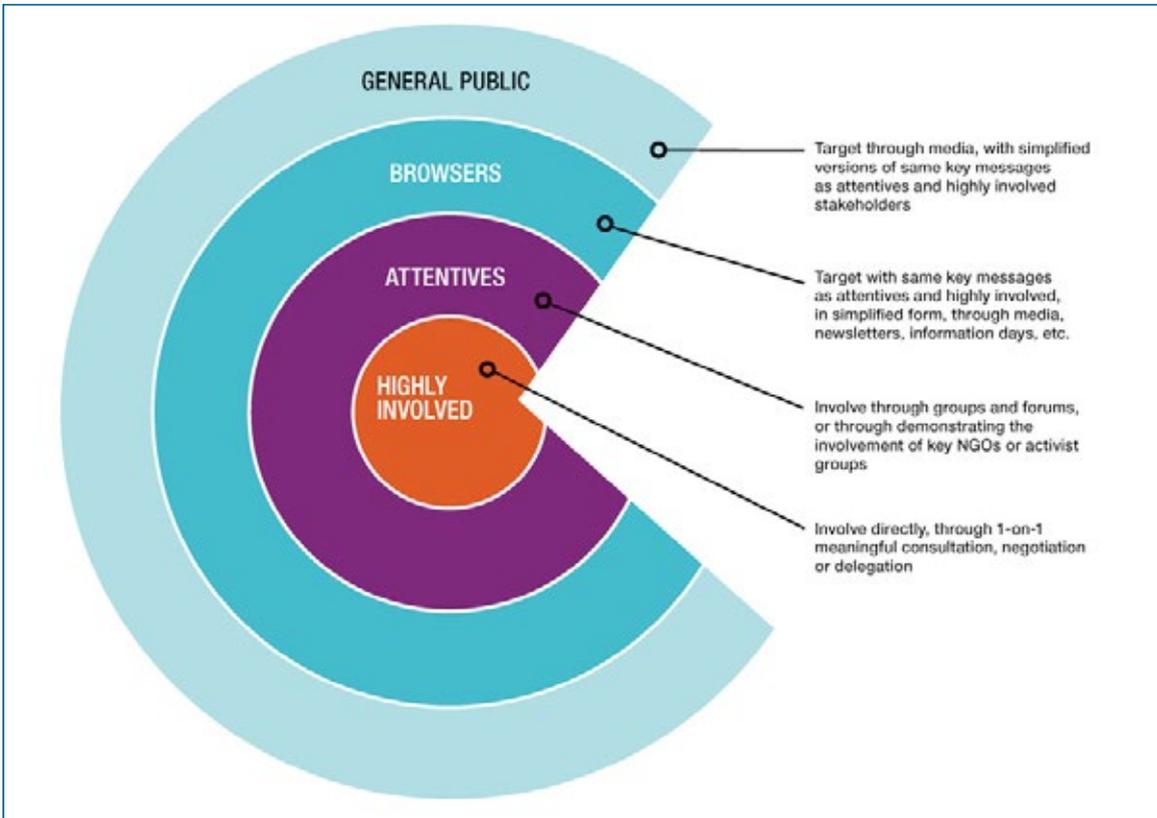
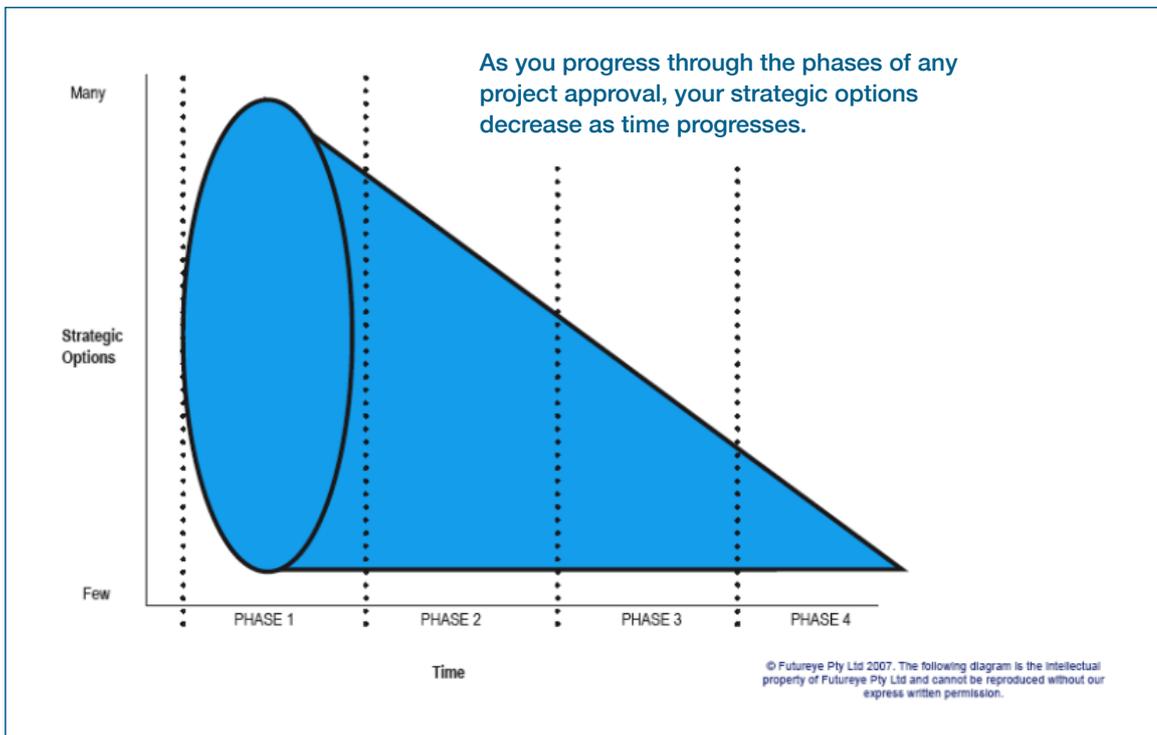


FIGURE 16: STRATEGY OPTIONS OVER PROJECT APPROVAL PHASES



5. Relationships need to be developed and maintained

Genuine community and stakeholder involvement to inform and resolve issues needs to continue throughout the life of the project, and this requires consistent and ongoing relationship development and maintenance. This is a fundamental cultural issue for the organisations involved. It is not the responsibility of a community consultation person or team: the philosophy, understanding and acceptance of community engagement must permeate the entire organisation.

6. Legacy needs to be of value

Considering and providing for the long-term role of the project in the community and its lasting, positive impacts should be an important element of gaining and retaining community acceptance and support. Communities should feel that infrastructure is developed for them, not in spite of them, and have ownership of the benefits. To achieve this, engagement processes need to enable communities to identify the positive impacts of any development and articulate the lasting value to the community.

Conclusion

Genuine and early engagement with communities and interested stakeholders can forecast, confront and resolve issues before they escalate or gain too much traction, causing the delay of infrastructure projects. Gaining community understanding and acceptance of the problems or issues that need addressing, along with the opportunities and benefits that flow from addressing them, set the scene for a constructive debate on the options and solutions, including revenue models. Understanding, respecting and engaging with community views and concerns early and often, is from a strategic standpoint fundamental to creating a social licence to operate, and to reducing project risk and therefore cost and time delays. This approach should be an essential part of every project proponent's toolkit and organisational culture.

Capital and communities can connect, collaborate and work together to enable successful infrastructure investment. But the community needs to be on board for the journey. There is rich scope for innovation in how this journey is planned and undertaken.

All major infrastructure projects face social risks. Understanding the source and dimensions of these risks is critical to reducing their impact. A critical step in gaining public understanding and acceptance or support for major infrastructure projects is to ensure genuine engagement with those who are uncertain about, or oppose, a proposal. This process should be integral to project planning and delivery right from conception. Building community support is not an adjunct or supplementary step in a series of project activities. It requires organisational leadership and culture to be focussed on the wider context of the project at its earliest stages, anticipating and understanding concerns and responding effectively through genuine engagement with affected communities.

Trust is a critical issue. Engaging with the community and rebuilding social capital will allow not only the expansion of the infrastructure funding base, but also enable the delivery of a broadly based pipeline of infrastructure investment. This requires that conversations around infrastructure move beyond highly politicised mega-projects to discussions around community needs and expectations.

8 INFRASTRUCTURE OPPORTUNITIES (SCOTT RYALL)

Having been involved in infrastructure investment in numerous western markets, I try to explain what the listed market investors will invest in. A key part of this must be a simple investment proposition that makes commercial sense and is not principally for political purposes.

Private funding critical, equity market will start out sceptical

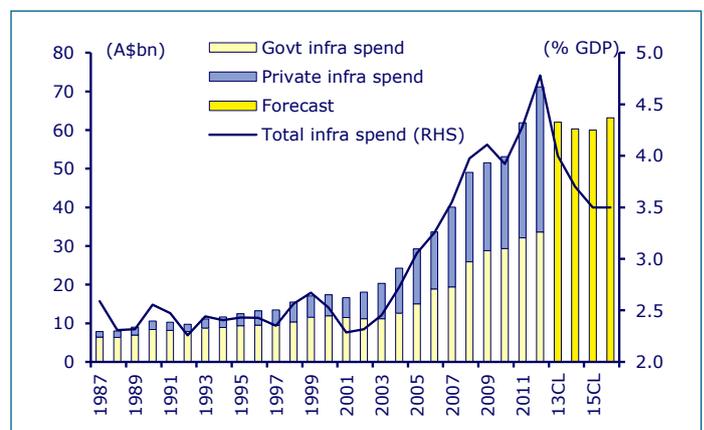
As background, it must be remembered that a number of recent greenfield infrastructure projects financed by the equity market have been spectacular failures: River City, BrisConnect, Cross City Tunnel. This has heightened concern as to the risks of utilisation post completion – that is, the underlying business case for the project.

Listed market investors are unlikely to be attracted to opportunities that appear politically motivated:

- Government indications. Messages that infrastructure spending will be good for job creation during construction indicate a higher risk of political, rather than commercial, rationale behind a project.
- Addressing an infrastructure deficit. The sizing of deficits, to a listed market investor, are reasonably meaningless. And in addition, most western countries and, increasingly, Asian markets are being identified as having infrastructure deficits.
- Productivity creation. This appears one of the most over-used economics terms in Australia at the moment. Many factors contribute to productivity (or loss of it) and it is difficult to use this as justification in isolation.

Why is this important? Private funding of infrastructure has increased from 45% of total 10 years ago to 55% of funding now (Figure 17). Resources sector has been a key driver of this given they needed to invest to get goods to market – it can easily be argued that this has ended up in inefficient outcomes (too much infrastructure, insufficient sharing and utilisation) but it does highlight the willingness of the private sector to invest where there is a business case (i.e. getting goods to market).

FIGURE 17: PUBLIC VS PRIVATE INFRASTRUCTURE SPEND



Source: IMF (2013); CLSA

Consumer and business sentiment needs an external jolt

CLSA's view of the positioning of the Australian economy is one that does not see much prospect of avenues of growth emerging to offset the drag from slowing resources investment (which is a well-documented phenomenon) without some external assistance:

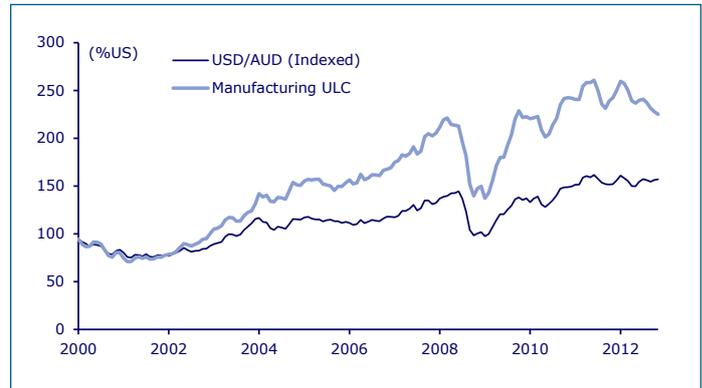
- Consumer sentiment is poor. There was a slight rebound post-election but this has reversed once again. CLSA's annual Mr & Mrs Australia survey highlights that fear around job security is a key barrier to consumers increasing discretionary spending rather than saving. The squeeze on consumer budgets from the rising cost of non-discretionary items is also a key factor.
- A key driver of this is poor business sentiment. In the absence of growth of consumer spending or a more facilitating investment environment (due to concerns around productivity, competitiveness and red tape), corporates are struggling to move ahead with risky medium/long term investment decisions due to uncertainty around payback. The projects that are seeing approval generally relate to cost-out in the form of reduced labour or increased efficiency, hardly likely to improve consumer sentiment.

The opportunity for government: deliver a vision

There is a huge opportunity for a government to deliver a message around infrastructure that actually addresses concerns of both businesses and consumers. Doing so might make it easier for the electorate to understand but, more importantly, demonstrate that there are business models worth investing because the private sector has a material role to play in the turnaround of the Australian economy. Two key messages should be the focus:

- It will improve competitiveness of Australian industry – this means jobs. Figure 18 shows the alarming loss of competitiveness of Australia vs the US in unit labour costs. Since 2000, Australian ULCs are up 140% relative to the US, the worst loss of competitiveness across Asia. 60% of the increase is currency related, but 10% is due to real wage increases and 30% due to relative productivity loss.⁴³ Move towards addressing the specific cost imposts being placed on Australian industry relative to other western countries as well as emerging markets in our region and we address a key underlying concern of Australian businesses – that we are fast becoming uncompetitive. In this respect, far better to focus the jobs message on being created by the users of infrastructure rather than the builders of infrastructure.⁴⁴
- It will make goods more affordable, hence lowering cost of living pressures – this means more chance of increasing discretionary spend. Supply chains relative to the world are relatively inefficient in Australia hence there is a significant opportunity to take cost out, hence reducing the cost of goods for the end consumer. CLSA believes a key differentiator for investment opportunities will be companies that can assist their own customers in reducing costs (increasing competitiveness and reducing costs to consumers).

FIGURE 18: AUSTRALIA VS US RELATIVE ULC WITH FX RATE

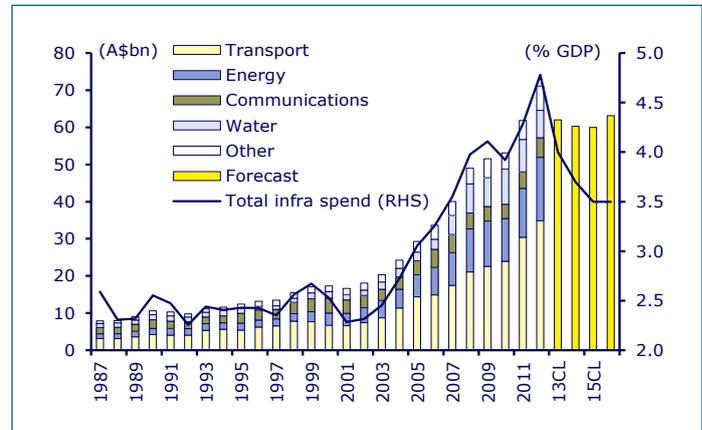


Source: CLSA; CEIC

So what could be sold to the equity market?

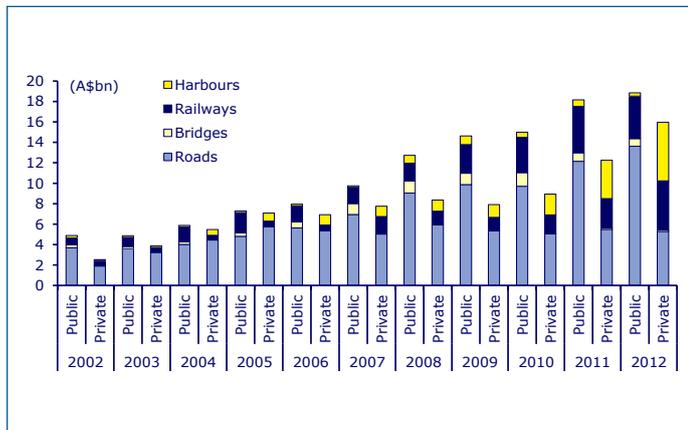
We have focused on the main categories of infrastructure spend in the ABS definitions: transport, energy and water. We exclude communications given the NBN is already very much a focus for both sides of politics. Transport infrastructure is the largest category and has been the key source of growth in spend (50% of growth since 2005), much of which has been resources related (Figures 19 and 20). So we break this down by roads (the focus of public spend) vs rail/port (more private sector).

FIGURE 19: INFRASTRUCTURE SPEND BY SECTOR



Source: ABS (2014); CLSA

FIGURE 20: PUBLIC VS PRIVATE SPEND ON TRANSPORT INFRASTRUCTURE



Source: ABS (2014); CLSA

Roads: the quality of project is critical

Private investment in roads has been healthy for some time. But it has been public investment that has been the growth driver over the past 5 years. Clearly there have been a number of poor investments in recent years – essentially the common factor is lack of traffic compared to the build cost. So the key to ongoing financing is proof around the quality of project, ie traffic profile. Two recent examples of how to address such concerns are seen in NSW projects:

- M1-M2 project. Any user of Pennant Hills Road will attest to the need for this project, but to ensure the project was commercial the government allowed Transurban and partners to use higher pricing on the M7 to fund the project and has forced trucks to use this road (sometimes it is tempting for truck drivers to bypass toll roads).
- West Connex. Will be funded by government and then progressively sold down to the private sector on completion.

Rail/port: some imagination beyond resources

Half of the growth in transport infrastructure spend since 2005 has been private port and rail spending. This has been driven by the resources sector, particularly bulk commodities and gas projects – the primary beneficiaries have built the projects. However for the broader economy, we suggest that the government can assist in making projects more attractive to the private sector:

- Container port investment is coming, particularly in NSW and Victoria with third terminal operators being introduced in both markets. The primary concern in the market is around utilisation of facilities and hence the prospect of price competition. However some of the investment is for much-needed growth in capacity and the flow-on benefits to the economy in terms of lower cost of unloading and distributing of goods – this is a benefit that we do not believe has been sold that well. And it makes more sense given current operators have also invested in projects to drive efficiency themselves.
- Freight rail investment looks patchy. Around Sydney there are two new dedicated freight lines being built but it does not

solve the issues of freight moving through Sydney (and the horrendous inefficiency and cost this creates). There would appear to be numerous ways of selling freight rail to the investment community (and perhaps the public more broadly). How about looking at taking trucks off roads and hence significant savings in spend on roads upgrades from increasing the competitiveness of rail vs road? It might be difficult to invest in now but the investment market will assist in financing such projects in the event that scale can be reached (and hence costs can be minimised).

Energy infrastructure: can we reduce ongoing capex?

The general public is acutely aware of increases in utility bills over the coming years. But probably not that the driver is a \$40 billion investment pipeline over the next 5 years. Given the companies themselves have little incentive to minimise capex due to the returns earned under the regulatory process, why doesn't the government get involved in trying to reduce capex going forward? This will ease pressure on households but also reduce risk of technological advancements that could see such spending on increasing capacity running reasonable levels of risk.

Water infrastructure: national-building, avoiding white elephants

The last decade has seen \$10-15 billion of water infrastructure spend, specifically on desalination plants which are now mostly in standby mode. This is not a great environment for private sector participation going forward.

But what about improving water infrastructure to farming areas? This could reduce variability around water availability, the number one issue for lack of investment in the agricultural sector in Australia. Any such infrastructure would likely see an increase in related investment by the private sector to expand capacity given the more stable returns possible.

9 SUPERANNUATION FUND PERSPECTIVE (GORDON NOBLE)

Australian superannuation funds hold around \$63 billion in infrastructure. Superannuation funds also hold investments in listed infrastructure companies and infrastructure debt through their fixed interest portfolios. On average Australian superannuation funds are estimated to have invested around 5% of their total assets in infrastructure compared to less than 1% in the rest of the world. It is projected that Australian superannuation capital will increase from \$1.8 trillion to \$6 trillion by 2037. The increase in superannuation capital alone suggests that there will be a significant pool of capital that may invest in infrastructure.

Global capital, in particular long term pension capital, is already investing in Australian infrastructure. Infrastructure is becoming a growing international asset class for pension funds and insurers who are seeking to match long term liabilities with long term, low volatile, cash flow positive assets. According to the Prequin Investor Report 2014, the level of institutional investor capital secured by private infrastructure funds that closed in 2013 was US\$38 billion, an increase of 31% on funds that closed in 2012 and 58% on funds that closed in 2011.

With US\$21 trillion of capital in OECD pension fund systems alone this is a significant pool of capital that can be attracted to invest in Australian infrastructure. There is clearly no shortage of private sector capital that could potentially be deployed to finance public infrastructure in Australia. Private capital markets will finance most projects at the 'right price'.

Super funds want certainty not tax concessions

International experience demonstrates that it is possible to stimulate capital markets through financial innovation. Credit enhancement is one way that governments can intervene to incentivise non-bank investment; although guarantees and risk sharing arrangements can also be used. Credit enhancement offers insurance of returns on assets whose capacity to generate returns is not matched by what is realised as their underlying contribution to productive potential and value creation to the society. Government support can be used not just to make a project commercial by providing capital but to address investors' core issues around risk. As investors embrace higher yielding investment in a low yield environment, the need for credit enhancement may change over time and should be constantly monitored.

Such government guarantees and tax concessions are not costless. Given the scale of the infrastructure investment needs, and returns required by superannuation funds, misallocation of those funds to unproductive projects could require significant credit enhancement, representing either a major burden to government and community, or sovereign risk to superannuation funds and retirees.

Yet superannuation funds are not looking for taxation incentives to invest in infrastructure. The issue for superannuation funds is not just the rate of return on an investment, but whether to invest or not. In this regard a major factor that influences superannuation investment is the stability of the regulatory environment. In a world where governments are likely to be fiscally constrained, government support should be regarded as a scarce commodity.

Brownfield versus greenfield risk

Superannuation funds have a variety of different objectives from their infrastructure investments. The availability of funds may mute incentives to examine user charges.⁴⁵ The Productivity Commission's (2014) analysis suggests that the capital recycling model could be seen to replace the need to undertake cost-benefit analysis, in particular where the proceeds of an asset sale are automatically hypothecated to investment in new infrastructure projects. Adoption of a 'recycling of capital model' is ultimately for government. The recycling of capital model should principally be seen as a mechanism for governments to communicate to their electorate that proceeds of asset sales will be used in ways that will provide the community with new infrastructure. Such a model is not inconsistent with a commitment to investigating user pays, transparency around project selection and cost-benefit analysis of projects.

Westpac in its recent submission to the Productivity Commission Inquiry on Public Infrastructure noted that all new greenfield projects since the Global Financial Crisis had been financed by banks. Whilst the resilience of Australia's banks during the GFC was one of the major reasons why Australia's economy avoided a deep recession, the capacity of the banking system to finance future infrastructure is likely to be constrained by Basel III. The impact of Basel III is to force banks around the world to hold more capital against loans. Banks are required to hold more capital against infrastructure financing than for other activity such as retail deposits.

Some superannuation funds will actively seek construction risk on the basis that taking on risk as one way of delivering investment returns. Superannuation funds have recently invested in greenfield infrastructure projects where off-take agreements (for instance in the energy sector) have been part of the project parameters. There is likely to be future demand by long term investors to invest in greenfield infrastructure. That said, there have been well publicised commercial toll road projects that have resulted in losses to superannuation funds. In the aftermath of the Global Financial Crisis there was also an aversion to investing in riskier projects. Where projects are well structured, including greater transparency around governance and patronage risks, superannuation funds will be prepared to invest.

Liquidity can be addressed in other ways

In the short to medium term, liquidity constraints will not necessarily impinge on the ability of superannuation funds to invest in infrastructure at a scale that will meet supply. However it is important that there is an understanding of the way that liquidity may impact on superannuation investments in the future. The advent of choice for superannuation members, combined with the ready access to online functionality by members raises the likelihood of a fund receiving significant requests for redemptions or switches over a short time period. In the GFC period, we observed a period where up to 50% of membership looked to switch from their current option to a lower risk option. For a fund with significant illiquid assets this presents two problems: firstly having the ready access to cash to pay out redeeming members; and secondly ensuring that remaining members are not disadvantaged by a "fire sale" of less liquid assets.

There are moral hazard issues with providing superannuation funds with ability to access liquidity in excess of current prudential arrangements. It is important that superannuation funds have the ability to access liquidity in the future, particularly as more members move into the drawdown phase where pension payments are made. The issue of liquidity should be addressed from a superannuation system perspective. Any measure which favoured infrastructure as an asset class over other asset classes is likely to have impacts on the ability of other asset classes to access capital.

Regulation is also heightening the focus on liquidity risks. APRA have placed significant emphasis on liquidity risk management in the post-GFC environment. Prudential reviews have focused on the magnitude of less liquid securities and the effectiveness of the Fund's Liquidity Management Plan (LMP) as set out in the new Investment Governance requirements in SPS530. One approach to mitigate these issues is the use of repurchase arrangements or overdraft facilities. A number of Australian superannuation funds have put such arrangements in place as part of their liquidity management plan. These arrangements are typically between the superannuation fund and a major bank. The contract is a commitment by the bank to provide cash either: a) by way of an overdraft type facility, or b) by way of a repurchase agreement where collateral is provided by the superannuation fund.

Corporate bonds

One of the outcomes of the GFC was the collapse of the monoline insurance market. The role of monoline insurers in the infrastructure market was to insure bonds, guaranteeing the insurer would cover the principal and interest if the bond defaulted. The impact of the monoline insurance market was to create AAA debt that was attractive to institutional investors out of project bonds that carried more risk. The Australian project bond market closed at the end of 2007, principally due to the Global Financial Crisis. According to Infrastructure Australia the bond market had provided approximately \$6.2 billion of long term wrapped project bonds from 2005 – 2007 and \$2.3 billion of long term unwrapped project bonds from 2000 – 2006. According to Infrastructure Australia (2014 p.7):

Since the closure of the project bond market, Public Private Partnerships have in the main been financed with short term bank loans at significantly higher margins – increasing refinancing risk and potentially reducing public sector value for money.

The depth of the banking sector's structuring and transaction expertise means that despite the implementation of Basle III, banks in Australia are still likely to have an appetite for infrastructure finance. Whilst banks continue to play a major role in infrastructure financing, according to PwC's global report Capital Markets: The Rise of Non-Bank Infrastructure Project Finance we are at the tipping point (PWC 2013c, p.4):

There is a clear opportunity for the private sector to provide infrastructure financing via project bonds and non-bank lending... Project bonds and non-bank lending could provide a flow of suitable highly rated assets direct to pension plans and life insurance companies.

Furthermore, PwC argues that project finance markets are becoming more sophisticated at dealing with construction risk, which has deterred some superannuation and pension funds from investing in infrastructure. A major reason for the slow uptake of infrastructure project bonds is a lack of clarity amongst both governments and project sponsors regarding the feasibility of bond finance relative to the "tried and tested" route involving one or more of bank debt, multilateral finance and capital contributions. Total annual bond issuance has recovered to levels approaching pre-global financial crisis levels with issuance at the BBB credit rating level increasing as a proportion of total issuance from around 25% in 2012 to around 45% in 2013. In addition the Productivity Commission notes that a nascent unrated and sub-investment grade market has emerged (Productivity Commission 2014).

Whilst the long term environment is supportive for infrastructure bonds,⁴⁶ short term challenges to the ability to provide infrastructure debt lead to suggestions that superannuation funds can step in to fill the breach if the banking sector is unable to supply debt finance. It is important that there is an understanding of the particular constraints superannuation funds face in this regard. A superannuation fund that invests in the equity of an infrastructure asset does not want to also hold debt in the same project. The reason for this is that in the event that the asset becomes distressed and moves into liquidation the interests of equity and debt investors are different. Superannuation funds would find themselves in a conflicted position should this be the case. The conflict of investing in both debt and equity is able to be addressed through other participants in the superannuation industry. There is also a significant pool of pension capital globally that has an appetite to invest in bonds that can be attracted to Australia with the right policy settings.

Project-specific infrastructure bonds

Whilst the media has referred to the opportunity to create Aussie infrastructure bonds, the reality is that the market for project specific infrastructure bonds would not be structured for 'mum and dad' investors. Fund raisings for large infrastructure projects are never likely to be achieved by going direct to the SMSF market. Project bonds are by their nature specific to the project. Even with credit enhancement, investing in project bonds is likely to remain the realm of sophisticated investors that understand the implications of different term sheets. The development of a project finance market is also in the interest of the banking sector, which will be able to use its structuring and transaction expertise to establish projects, with the finance ultimately held by a different group of asset owners. Where project specific infrastructure bonds are well structured with attractive yields it can be expected that superannuation funds will invest.

Sovereign bonds

From a whole of system perspective superannuation capital is available to invest not just in privatised assets and greenfield infrastructure but in sovereign bonds. Superannuation funds invest in sovereign bonds through their fixed interest portfolios. In addition life insurers invest significantly in Australian government bonds through insurance premiums that are generated through superannuation funds. Should governments with strong credit ratings offer sovereign debt to investors it is likely that there will

be significant demand. It is a matter for governments to decide whether to seek private investment in infrastructure or finance activity themselves. A key focus for governments is naturally ensuring that credit ratings are maintained at levels that are attractive to institutional investors.

Public Private Partnerships (PPPs)

Superannuation funds as long term investors should have more influence in PPPs, but face a challenge in putting up speculative capital to finance the bidding costs of a PPP. PPPs have in the past been dominated by commercial providers with short term incentives. Superannuation funds and their investment managers find it difficult to participate in tender processes. Unlike banks and construction companies, investment managers are unable to defray bidding costs across their other investments. The more expensive and time consuming a bidding process is, the less likelihood that superannuation funds and their investment managers will be able to directly participate. Where a super fund incurs costs in a bidding process, and the bid is unsuccessful, those costs must be recouped from other investment capital.

Another factor is relevant to the involvement of superannuation funds in the bidding processes accompanying PPPs: consortium interests, focused on the short term, do not necessarily coincide with the interests of superannuation funds. Superannuation funds are long term investors in infrastructure with 25-40 year times frames. The current PPP framework has encouraged a transactional approach to infrastructure investment that is focused on short term interests. Recent taxation discounts on infrastructure projects have in fact primarily provided benefits to constructors. As noted above, it is not so much taxation benefits from investing in infrastructure that will make it attractive to superannuation investors. Rather it is the returns to be earned from that investment that make such investments attractive. There will be increased capacity for funds to directly participate in consortia as superannuation funds increase in scale.

Balancing value to community with value to investors

To deliver sustainable investment returns infrastructure needs the support of community and bi-partisan political support. The danger of selecting projects according to short term political criteria is that there is no guarantee that projects will increase productivity in the long term. Infrastructure projects that are not economic have a real cost the funds allocated to that project could have been allocated to alternative investments. This is not just about the opportunity cost of investing in other infrastructure projects: investing in a diversified range of assets including capitalising Australian companies may offer alternative economic benefits.

Superannuation funds are long term holders of infrastructure assets and will be owners of assets long after short term economic stimulus has passed through the economy. In order for there to be long term community support for private investment in infrastructure assets it is important that the customers served by the infrastructure asset are happy. Selling infrastructure assets too cheaply can lead to community resentment. This creates electorate support for regulatory changes that would have the impact of winding back windfall gains. For superannuation funds who are long term investors it is important that the sale or development of infrastructure assets strikes a balance

between value for the community and value to investors. SMART Infrastructure Facility (2013, p.5) notes:

The reality is that while infrastructure can be partnered with the private sector, when there is a failure or breakdown the community will almost always turn, as a last resort, to the government to fix it. Hence the partnership between the government and the private sector must be robust and directed at maintaining strong community confidence. The increasing reliance on private investors to fund public infrastructure places an even greater imperative on governments to have the ability to interact, negotiate and secure outcomes in the best interest of the community. This requires strong institutional architecture, including anti-corruption agencies. Governments need to be open and transparent about the relationship with private sector participants and the value such participants provide to overall infrastructure development.

There are some assets, in particular water, where there is a high degree of public sensitivity around transfer of the asset to private investors. It is not in the interests of superannuation funds, who often compete to attract members, to buy assets where there is a strong degree of public resentment at the privatisation. Superannuation funds in effect represent the Australian community and on this basis the transfer of an asset to superannuation funds can be viewed as the community having a stake in the investment.

Reforming PPP bidding processes

Rigorous cost-benefit analysis is required to ensure that projects that are selected for prioritisation have the capability to deliver long term economic benefits which in turn will support the ability of projects to deliver commercial outcomes over the long term. Reforms to PPP processes can address long term investor needs. A number of possible options are worth exploring:

- Establish an independent body to oversee bids and set standardised conditions.
- Establish a coordinated and coherent data collection process to improve future project selection decisions. Benchmarking data will assist infrastructure investors to analyse risk and should, all things being equal, result in investors making better informed investment decisions. In turn this leads to improved investment performance that will ultimately benefit superannuation fund members. Benchmarking data will support consistency across projects which can lead to efficiency and will also support community confidence in infrastructure, an important element in establishing a stable investment environment.
- Seek to remove error risk on forecasts from bidding processes, which can lead to an adverse selection process whereby the consortium with highest traffic projection (in regards to a toll road) is prepared to make the highest bid.
- Adopt measures to ensure smaller projects are not deterred due to the cost of conducting cost-benefit analysis. Smaller infrastructure projects have the capacity to deliver significant economic value.
- Design PPPs to address the potential for additional long term investments in an asset. For example, a PPP for a road or rail project could establish corridors in respect to future rail or road expansion; a hospital or school PPP could provide room for extra classrooms or hospital wings. It is very difficult and

prohibitively expensive to try to retrofit investments in the future and this detracts from the long term social and economic benefits that the infrastructure asset can deliver.

- Factor sustainability considerations into the PPP frameworks. As long term investors, superannuation funds aim to integrate environmental, social and governance factors into their investment processes. There are a number of ways in which sustainability can be factored into infrastructure: for example, the work being done by the Australian Green Infrastructure Council to develop a series of green rating tools, in a similar way to the way that green star ratings have been developed for the built environment.

A pipeline of projects

There is a need to ensure flexibility in devising an actual list of projects to be brought forward for construction. A consistent approach to seeking private investment will provide superannuation funds with greater visibility over potential investments that may be available. An investment pipeline is important for a number of reasons. Firstly, it provides superannuation funds with a clear pathway of projects that will be coming on line. Infrastructure investments are lumpy and in order to 'digest' them into a portfolio a superannuation fund needs to be able to plan future investments.

A pipeline of projects also creates an incentive for superannuation funds and other institutional investors to build bidding teams. Where projects are sporadic institutional investors cannot justify keeping bidding teams together. Having such teams increases the capacity of institutional investors to bid for projects. This can increase competitive tension which would otherwise not necessarily exist.

Finally, devising a pipeline of infrastructure projects can overcome the tendency for governments to seek infrastructure projects that have short term political appeal. This may relate to delivering benefits to a segment of the electorate, or may focus on projects that offer short term economic stimulus.

Global focus on infrastructure by governments has to be managed well

There is significant global interest in the role that infrastructure investment can play supporting economic growth. There is no doubt that infrastructure can play an important role in driving long term economic growth. However a danger exists should infrastructure projects be seen as a tool to stimulate short term economic growth. SMART Infrastructure Facility (2013, p.12) states:

An institutional mind shift is required where infrastructure should not be just a counter cyclical economic policy past time. The infrastructure industry does not function well as a 'short-order' cook. It would be beneficial to the nation to expand the supply capacity of the infrastructure industry and for governments to engage it in a more consistent manner with a 10 to 15 year project pipeline.

Politically expedient infrastructure decisions ultimately create an environment that is not supportive to long term investment. Governments should consider the impact of decisions on the overall investment environment, not only in relation to the establishment of projects but the regulatory environment around existing projects. A case in point is the decision of the Spanish Government to change renewable energy feeding tariffs after investments had been made. Such a politically expedient change to the regulatory environment has an impact on the assessment that future investors make concerning investing in Spanish infrastructure in the future.

Governments need to adopt a consistent attitude to the role of investors in projects. To use the 'pipeline' analogy one of the challenges for superannuation investors has been that governments have turned 'on and off' government investment in infrastructure according to the position of their budgets. For example, when the Australian government was receiving strong revenues from the commodities boom it was notable that the investment pipeline was turned off. Superannuation funds continued to invest in infrastructure but started to seek investments internationally.

Conclusion

As the Productivity Commission (2014) notes, poorly chosen infrastructure projects can reduce productivity and financially burden communities for decades with infrastructure that is at once expensive to maintain and unnecessary. Superannuation and pension providers are the natural holders of mature assets including ports and energy assets. Australian superannuation funds also have a long track record of investing in infrastructure. As long-term investors, superannuation funds are interested in achieving long-term sustainable investment returns. Our interests align with those of the community and governments that are interested in ensuring that assets are managed responsibly for the long-term benefit of society.

Public support for privatisation of specific assets is critical. From the perspective of the superannuation sector the best infrastructure investments are those where there is long term community acceptance of private ownership. This reduces political pressure for regulatory changes to pricing structures which can have significant impacts on the value of an asset. All stakeholders including investors, constructors, banks and governments have a role to play in communicating the benefits of privatisation of assets to the community. The terms of the original investment will significantly impact the success of the investment in the long term. Inefficiency in bidding process that has led to a bias for projects that projected traffic that proved to be well in excess of reality undermined the confidence of superannuation fund investors.

While there exists an ever increasing pool of superannuation funds able to invest and a long list of potential projects to invest in, there is an opportunity cost of governments endorsing political expedient infrastructure decisions that do not increase productivity which is the alternative investments that superannuation funds could have made that can have significant economic and social benefits.

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Appendix 2: notes

1. Around this date the Productivity Commission released its draft report on Public Infrastructure. While we agree with a number of the propositions in that report, we believe our five proposals take a different approach to the issue of funding and financing of infrastructure.
2. We acknowledge that infrastructure may be funded by expansion in tax base driven from productivity enhancement, allowing government borrowing to finance expansion. Increasing government debt is another issue of trust with the community, and requires engagement.
3. See for example Hensher et al. (2012).
4. To quote a key paper on this trend in the US, Jaimovich and Siu (2012, p.14). To summarize, jobless recoveries are evident in only the three most recent recessions and they are observed only in routine occupations. In this occupational group, employment never recovers in the short-, medium- or long-term. These occupations are disappearing. In this sense, the jobless recovery phenomenon is due to job polarization. Such shifts tend to be triggered by downturns, not a gradual change over time. As Australia has avoided such downturns for an extended period we may have avoided witnessing these phenomena, but that may change now. Note in Australia, since 1978 growth has needed to sit above 3.1% to avoid increases in unemployment, speaking to impact of productivity gains to processes potentially cannibalizing employment in the absence of growth (Jericho 2014).
5. Summers (2013).
6. For example, see "Australians support road usage charges over fixed rego fee", Media release, http://sydney.edu.au/business/_data/assets/pdf_file/0010/198694/TOPS-2014-Q1-March_Media_final.pdf
7. I thank John Stanley for providing me with this example.
8. Such a review has also been recently advocated by Infrastructure Partnerships Australia et al. (2014).
9. Dom Browne, 'Single local growth fund wins £6 billion of local transport funding', Surveyor Transport Network, 27 June 2013. Browne reports: "The SLGF will give the country's 39 Local Enterprise Partnerships (LEPs) strategic influence over at least £20bn in the years to 2021, with annual budgets of £2bn from skills, housing and transport cash for 2015-2020." <http://www.transport-network.co.uk/Single-Local-Growth-Fund-wins-6bn-of-local-transport-funding/9050#.U1c9UeaSyaQ>. See also HM Government, Growth Deals: Initial Guidance for Local Enterprise Partnerships, URN BIS/13/1056, July 2013.
10. Productivity Commission (2003) explores the relationship between social capital, the ability to act in terms of policy, and productivity.
11. "The largest percentage of Australians (47%) say that their main reason for distrust of public figures and national leaders is linked directly to a lack of truth and transparency." McCrindle Research (2013).
12. For example buildingSMART Australasia recommends "Encourage the Australian States and Territories through the Council of Australian Governments to require full 3D collaborative BIM based on open standards for information exchange for their building procurements by 1 July 2016": National Building Information Modelling Initiative, Volume 1: Strategy (buildingSMART Australasia, 2012), p.4.
13. Refer to Appendix One for details of the IFFWG members and authors.
14. Whilst the author is Chair of the Council the views expressed in this paper are his own.
15. Productivity Commission (2014), p.167-170, information request 5.1.
16. See PricewaterhouseCoopers (2013b, 2014).
17. Productivity Commission 2014, p.241-242.
18. Australian Trucking Association submission to the Productivity Commission Inquiry into Public Infrastructure dated 20 December 2013. PricewaterhouseCoopers (2013a).
19. Productivity Commission 2014, p.133.
20. Greater Manchester Combined Authority, Greater Manchester City Deal (March 2012).
21. Whilst the author is Chair of the Council the views expressed in this paper are his own.
22. The decisions in the 2014/15 Federal Budget to link revenue from the \$7 Medicare co-contribution to medical research and to link additional revenue raised from increases in fuel indexation 'by law' to road building expenditure are more recent examples of this.
23. With Josh Sgro, Partner, Herbert Smith Freehills.
24. Productivity Commission 2014, p.72-80.
25. Given these difficulties, Infrastructure Australia treats such benefits as a separate category in their submission templates for projects to go onto the priority list.
26. "Survival of the Un-fittest: Why the Worst Infrastructure Gets Built -- and What We Can Do About It" By Bent Flyvbjerg, Said Business School, University of Oxford* Article for special issue on "Infrastructure, Utilities, and Regulation" of Oxford Review of Economic Policy edited by Dieter Helm <http://arxiv.org/pdf/1303.6571.pdf>
27. Productivity Commission 2014, p.16.
28. One definition of building information modelling (BIM) is that it is "a digital representation of physical and functional characteristics of a facility. A BIM is a shared knowledge resource for information about a facility forming a reliable basis for decisions during its life-cycle; defined as existing from earliest conception to demolition." National Building Information Model Standard Project Committee, National BIM Standard United States, Version 2 <http://www.nationalbimstandard.org/about.php> (accessed 27 April 2014). The Allen Consulting Group, noting that there is no generally accepted definition of BIM, defines it as "a database that provides digital information about the design, fabrication, construction, project management, logistics, materials and energy consumption of a building.", Productivity in the Buildings Network: Assessing the Impacts of Building Information Models, 2010, p.vii. See also Productivity Commission 2014 p.382-5.
29. Richard Baker and Nick McKenzie, 'Australia one of the most expensive places to build', The Sydney Morning Herald Online, 12 February (2014), <http://www.smh.com.au/federal-politics/political-news/australia-one-of-most-expensive-places-to-build-20140211-32g2g.html>. See also Business Council of Australia (2013), p.23-4.
30. Productivity Commission (2014), p.18.
31. Productivity Commission (2014), p.285-7.
32. Productivity Commission (2014), p.290.
33. Nathan Johnson, 'National architecture policy recommended by ACIF', Infolink, 11 April 2014, <http://www.infolink.com.au/articles/news/national-architecture-policy-recommended-by-acif-n2505957>; Australian Construction Industry Forum, National Policy Compendium (Canberra, ACIF, 2014).
34. buildingSMART Australasia, National Building Information Modelling Initiative, Volume 1: Strategy (2012), p.5.
35. David Mitchell, "BIM adoption: Why can't it just be about best practice?" <http://sourceable.net/bim-adoption-why-cant-it-just-be-about-best-practice-david-mitchell/#sthash.58XnYbFR.dpuf> (accessed 27 April 2014).

36. McKinsey have produced a very useful table detailing 12 Disruptive Technologies: McKinsey & Co, Disruptive technologies: Advances that will transform life, business and the global economy (2013), p.5.
37. Examples of software solutions in this space include Consultation Manager <https://www.consultationmanager.com.au/index.html> and Darzin Stakeholder Management Software <http://www.darzin.com/index.php/products/community-consultation/>
38. Crowdfunding is not the only way to allow the public to contribute to the cost of infrastructure. An avenue to explore is direct investment by retail investors in infrastructure opportunities. Aside from the A-REIT structure, a structured community development fund model can be used to allow for investment in infrastructure projects: http://www.shelterforce.org/article/3658/two_structured_development_funds_a_peek_at_how_they_work/
39. <https://neighbor.ly/projects/heberlig-palmer-park-renovation>
40. <http://www.citizeninvestor.com/about>
41. Only once a project is fully funded is the money collected from individuals distributed to the project sponsor.
42. No public information on pricing is available, but to understand what is on offer and the various technology solutions, see <http://www.crowdbrite.com/main/pricing>
43. CLSA Australia Research authored by Scott Ryall, "Don't rely on A\$ alone", 25 June 2013.
44. CLSA Australia research report authored by Scott Ryall, "Don't rely on A\$ alone", 25 June 2013.
45. Efficient user charges are an effective means to reveal willingness to pay for new infrastructure and to improve the use of existing infrastructure. User charges are already the norm for most types of economic infrastructure, such as electricity, telecommunications, gas and water. Broadening the funding base of projects is an important reform option. A factor that should be considered in establishing policy around user charges and betterment levies is the transition that the Australian economy is undergoing due to demographics. Australia has an aging population. This has been identified through the Government's Intergenerational Reports. Over the next fifteen years the retirement of baby boomers from the workforce will result in a structural change in the proportion of workers that support each retiree. Currently around five workers support each retiree. In coming decades 2.7 workers will support two retirees. The implication of the changing structure of society will mean that there are limits on the financial burden that workers will be able to bear. This is particularly important in relation to toll roads. Many workers do not have control over their working hours. This has impacts where it is proposed that congestion charges be introduced to reduce congestion at peak times.
46. A number of factors will support the development of Australia's bond market over the long term: (a) Superannuation capital is projected to grow from \$1.8 trillion to \$6 trillion by 2037; (b) the transition for many superannuation fund members from accumulation to post retirement will support a shift in asset allocation from growth to defensive investments; (c) legislative reforms will make it easier for Self-Managed Super Funds to invest directly in bonds through listed markets; (d) the growing scale of superannuation funds is resulting in the development of in-house investment skills which will enable funds to execute directly in domestic markets; (e) the low yield global environment is encouraging international investors to look further afield for investments with attractive yields. With the right settings there is the capacity to attract international investors to invest in Australian bonds.

Appendix 3: Working Group members

Christopher Selth (Chair); Christopher Brown; Peter Cochrane; Jon Hickman; Martin Locke; Paul McDonald; Robert Nicholson; Gordon Noble; Scott Ryall; Katherine Teh-White (see below for short profiles of the Working Group members).

Advice was kindly provided by Patrick Lauren (Executive Director - Plenary Group); David Singleton (Non-Executive Director – ARUP); Lynn Wood (Chairman –Financial Reporting Council); Rich Arnold (CFO – Crowdfunder); Francesco Placanica (Placanica & Associates) and Jamie Crowley (Placanica & Associates).

Christopher Selth was, until recently, Chief Investment Officer at Five Oceans Asset Management, an international funds management business he co-founded in 2005. Previously Christopher was an Executive Vice President and Head of International Equities at BT Funds Management. He is also Chairman, ADC Forum Global Issue Group.

Christopher Brown spent 20 years as Managing Director of two of the nation's most influential industry groups - Infrastructure Partnerships Australia (IPA) and the Tourism & Transport Forum (TTF). He was recently a member of the expert panel on the Federal/State Commission on Sydney's 2nd Airport, he is a News Ltd and Fairfax Media contributor and acts as Special Counsel to the Secretary General of the United Nations World Tourism Organisation. A founding director of the Greater Sydney Partnership, he now acts as strategic adviser to the Committee for Sydney.

Peter Cochrane has held senior executive leadership and governance roles for nearly 20 years in the public and private sectors, including 14 years as Director of National Parks and head of parks Australia. He has a background in environmental science, policy and programs. He has an international reputation in conservation policy and practice. Peter is also an associate at Futureye.

Jon Hickman is chair of the Victorian Coastal Council. He has held CEO level appointments in universities and with state and local governments.

Martin Locke is a partner in Project Finance at PricewaterhouseCoopers. He specialises in PPPs, transport and energy project financing, structured financing and debt restructuring. He has over 20 years of direct banking experience with substantial international experience and has vast experience across a wide range of projects as government adviser and bid-side adviser.

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