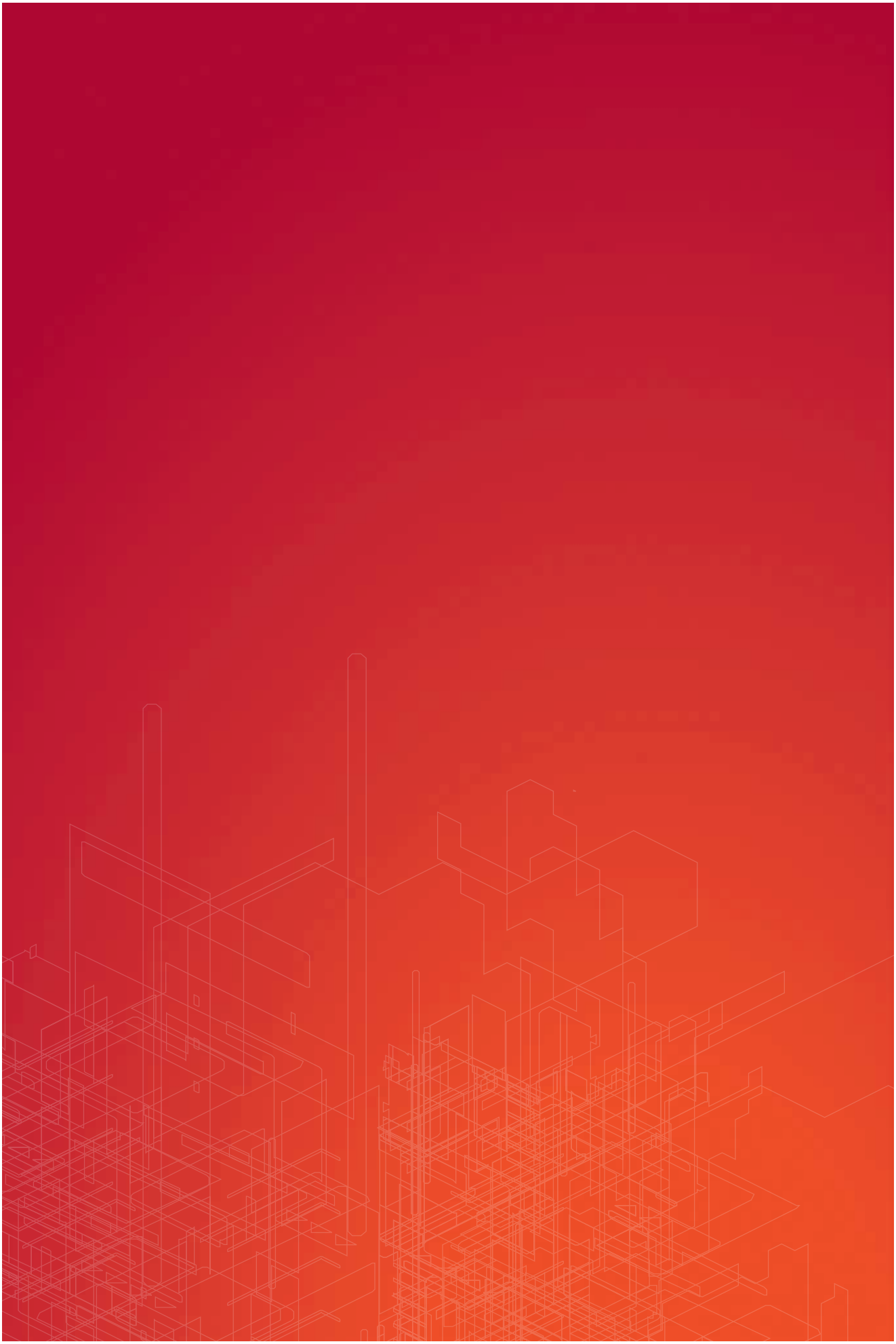
more give, less take

nab

Corporate Finance Insights: **Current Issues**

September 2012



Welcome

John Martin
Managing Director
Head of NAB Advisory

Welcome to our special infrastructure edition of *Corporate Finance Insights*.

Just as each new volume of Harry Potter was bigger than the last, as the number and expectations of our readers grow, we've responded to the positive feedback by delivering a somewhat expanded publication.

In the opening article, we consider the debate in respect to urban infrastructure and argue that while it faces the obvious constraints of a weak funding environment and mining boom-induced crowding out, a less apparent but no less crucial effect, is the unresolved conflict between public and private interest in existing procurement models.

Despite an enormous amount of work on the 'right' way forward, the whole infrastructure industry seems dissatisfied with the approach to urban infrastructure development in Australia.

We try to clear the impasse by outlining six broad principles that we believe can better align the interests of the government and the private sector, and therefore help reduce the delays and high costs of development.

A no less emotive issue, and one that we couldn't ignore for this edition, is the debate on the principles of carbon pricing and what the 'right' price is.

We compare our carbon pricing system (now law) to the systems of other jurisdictions, and consider how much reliance to place on imported permits. Given the Australian government's objective of reducing carbon dioxide emissions and transitioning to a low carbon economy, we consider if the current carbon pricing mechanism is likely to deliver this in the most cost-effective way.

From the nation's challenges on delivering necessary infrastructure, to the much-anticipated September release of Infrastructure New South Wales' 20-year strategy, and the hot debates of poles and wires and public private partnerships in-between – the Honourable Nick Greiner AC shares his views on all things infrastructure.

Much has been made of the links with the so-called infrastructure spending deficit and the impact on productivity. With this in mind, our economics group re-visit the analysis of productivity levels to consider the question of how the provision of economic infrastructure affects productivity and what it means to Australian economic growth.

Though perhaps underestimated since the sharp drop-off during the global financial crisis (GFC), we look at the recent trends in the private sector funding of infrastructure and outline some of the ways banks and other market participants are continuing to evolve and remain relevant for this sector.

Finally, how do our state governments continue to develop much needed infrastructure in a constrained financial environment? We review the impact of the Victorian government's asset sales in the early 1990s and set out the options available for New South Wales and Queensland in the decade to come.

We trust you will enjoy this instalment of our *Corporate Finance Insights* series.

Yours sincerely

John Martin
Head of NAB Advisory

In this issue

Funding infrastructure development: the A$770 billion mirage?

John Martin
Managing Director
Head of NAB Advisory

Dave Roberts
Head of Infrastructure &
Natural Resources Advisory
NAB Advisory

Why is it that Australia's projected infrastructure spend seems to have been stuck at A$770 billion for the past few years?

Whether it is government or private sector commentators, this figure gets used over and over again – despite tens of billions of dollars spent on large infrastructure initiatives in the past decade. It almost feels like the infrastructure spend is some form of mirage, to move us to our idea of a productive and efficient economy – always tantalisingly in the distance, but never getting any closer.

Is this perception driven by faulty forecasting or are we making insufficient inroads into the backlog of infrastructure spending?

While part of this perception is explained by the relatively loose nature of forecasting infrastructure projects, the rate of development of non-resource infrastructure does seem slow, expensive and patchy. This is despite the considerable commitment by all levels of government to improving the stock of infrastructure since the mid 2000s.

There is a fair degree of frustration within the private sector (including investment, construction, services and finance industries) around the slow deal flow and high cost of developing infrastructure projects, as indicated by the highlighted Super Fund Manager quote (Page 5).

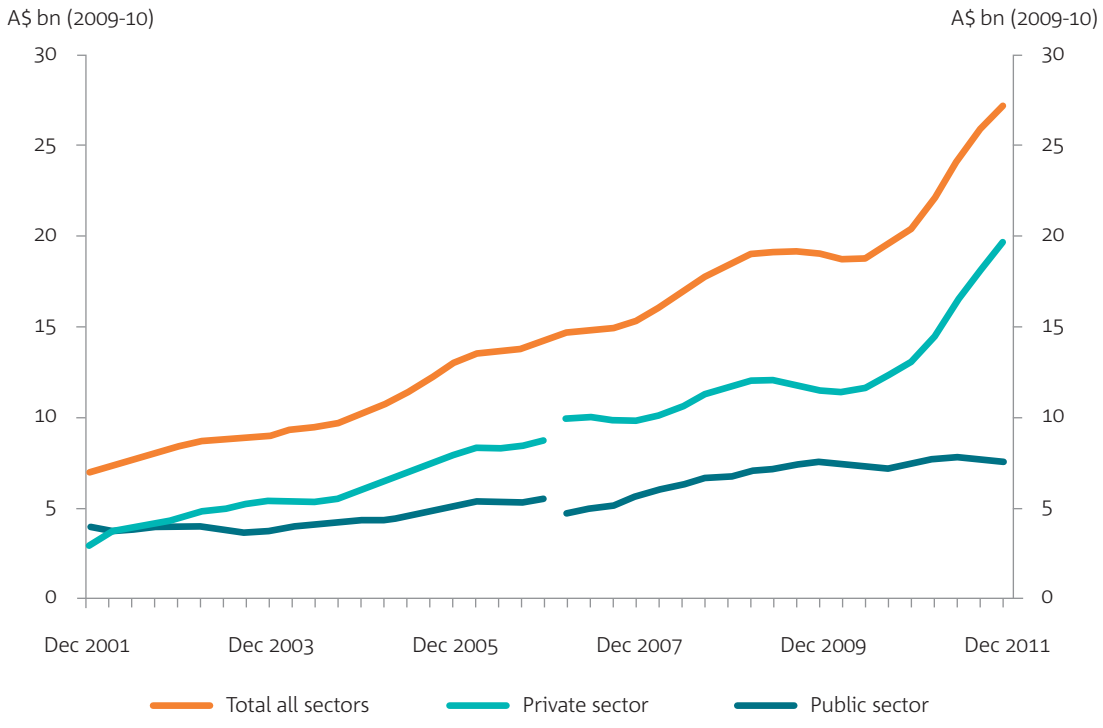
In this article we review the development of non-resource infrastructure (referred to as 'urban infrastructure') in recent years, and argue that while we have faced a number of significant global constraints, our obsession with 'the right models' for how the public sector interacts with the private sector (such as public private partnerships 'PPPs') is probably holding us back.

While investment and construction have been very strong, this is largely resource driven

There is no doubt that Australia is in the middle of a capital expenditure boom. In its *Economic Outlook*, the Organisation for Economic Co-operation and Development (OECD) forecasts that in 2012 and 2013 Australia will have the highest ratio of investment to gross domestic product (GDP) in the OECD - at around 28%, close to double that of the United States and Europe.

This is also confirmed by Chart 1, which shows a step change in total engineering work done in Australia over the past two years – it now stands at almost three times the levels of the mid 2000s.

Chart 1: Real value of engineering work done – Australia



Source: ABS, Engineering Construction Activity, Dec 2011.

"While everyone is telling me we should invest in Australian infrastructure – there are few deals, with high bid costs, offering lower returns than Europe and North America, with less liquidity. The business case just isn't there.
– Major Australian Super Fund Investment Manager, June 2012.

While there has been a significant uptick in aggregate investment and engineering work, this has been driven by the resource sector. As Chart 1 illustrates, work for the private sector has risen dramatically in the past two years while work for the public sector has remained relatively flat.

In its recent report, the Business Council of Australia estimated the investment pipeline in Australia at A$921 billion. As Table 1 illustrates, the growth in this pipeline has been driven by natural resources – which represents 46% of total investment (compared to a historical GDP share of less than 10%).

Further, in terms of financing, the level of urban infrastructure funding has slowed since the onset of the global financial crisis (GFC) in 2008. Chart 2 compares urban infrastructure project financing against project financing for the natural resource, energy, and utility sectors over the past decade.

This indicates that urban infrastructure financing over the past three years has remained below its high point in 2008. The expectation for 2012 is that urban infrastructure financing will decline while financing for natural resource projects (particularly liquefied natural gas (LNG) related) will show a significant increase.

This gives evidence of very strong growth in investment, construction and funding in the natural resource sector (largely mining, oil, and gas) in the past two years. Construction and investment in urban infrastructure has been far more subdued.

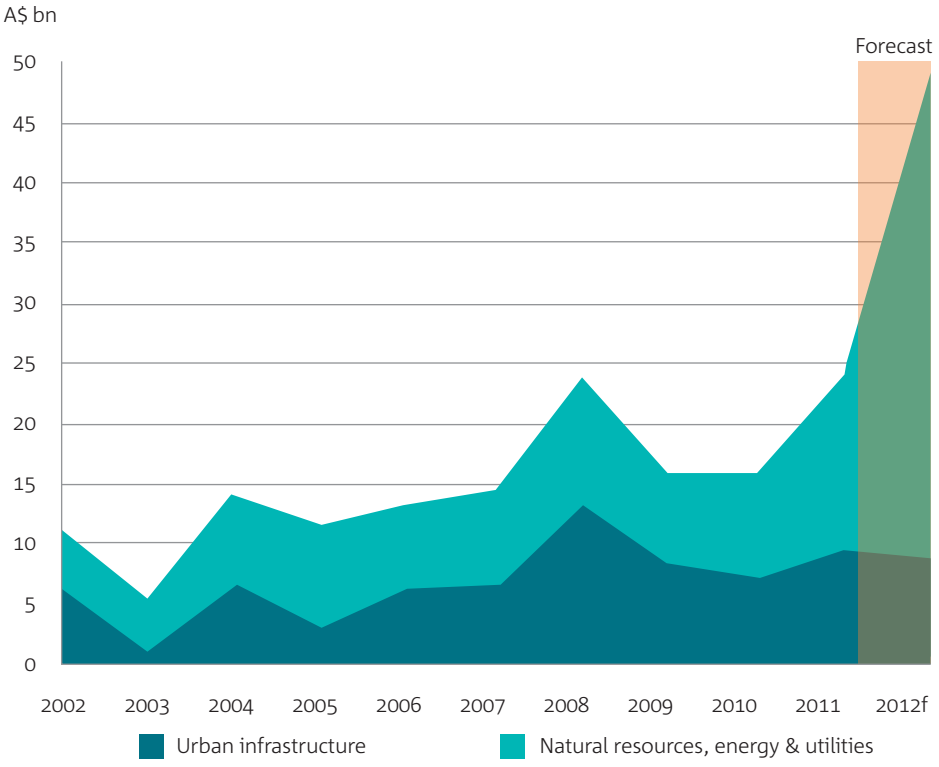
The proponents of resource projects (largely private sector mining and energy companies) have been able to overcome fairly trying economic circumstances and invest record amounts into rail, ports, and

Table 1: Australia's investment pipeline (A$bn)

	Economic infrastructure	Mining, oil & gas	Other	All sectors
Under construction	137.3	168.7	78.1	384.0
Committed	6.6	54.2	5.5	66.2
Under consideration	39.0	125.8	26.7	191.5
Possible	195.0	63.8	20.5	279.4
Total	377.9	412.5	130.9	921.2

Source: Business Council of Australia, *Pipeline or Pipe Dream*, June 2012.

Chart 2: Project finance volumes in Australia



Source: PFI, NAB estimates, 2012.

LNG processing facilities. Meanwhile the proponents of urban infrastructure, typically state governments, appear to have been relatively constrained since the onset of the GFC.

What is holding urban infrastructure back?

Urban infrastructure has not directly benefited from the same strong economic drivers in the way that the resource sector has. There are at least two fairly obvious constraints imposed on urban infrastructure development:

The primary and secondary impacts of the GFC

The very constrained funding environment of the GFC limited the availability of capital for infrastructure and made it much more expensive (the primary impact). In addition, as a result of the GFC (or policies to mitigate the GFC) the financial position of all governments has been significantly weakened – reducing governments' capacity to sponsor and fund infrastructure spending.

Crowding out

There is no doubt the natural resources boom has had some 'crowding out' effect on urban infrastructure. There is less capacity for urban infrastructure projects to attract and afford the necessary design, development, construction and operational skills for large complex projects.

These issues have been discussed previously in *Corporate Finance Insights* (see the first article in the August 2011 edition). It is hard to fight against these fundamental global trends, and they will remain constraints for the foreseeable future.

However it is worth noting that the first half of 2012 has seen some cooling of the resources boom in response to slowing Asian economic growth – which may help to alleviate some of these impediments.

A less obvious, but crucial constraint, however, is the way in which governments approach procuring infrastructure.

A key difference between resource and urban infrastructure is the role of government in sponsoring urban infrastructure development. While government has a role in facilitating resource infrastructure development (eg. planning and environmental approvals, labour laws, taxation) the primary sponsors are mining, oil and gas companies.

In the case of urban infrastructure, government is typically the major sponsor and driving force behind its development.

With most of the infrastructure construction, operation and ownership skills in the private sector this leads to the requirement for various forms of 'public private partnership' to bring new urban infrastructure into being.

The challenges of government infrastructure procurement are examined in our article *The public-private debate in infrastructure: it is less about models and more about mindset* on page 20.

Executive perspective:
Nick Greiner on all things infrastructure

The Hon Nick Greiner AC
Chairman
Infrastructure
New South Wales

As Infrastructure New South Wales (INSW) heads towards the unveiling of its much-anticipated 20-year plan, Chairman Nick Greiner discusses the state and national infrastructure agendas, focusing on how the state can rebuild its asset base and improve procurement processes.

How are we positioned to deliver the national infrastructure we need?

There is a real danger of analysis paralysis in this area, because it isn't an issue of finding the one definitive model that works. There is no such thing. We all know there is a big deficit of infrastructure – particularly economic infrastructure.

New South Wales (NSW) in particular has been hopeless at procuring infrastructure. It's not just a matter of not spending enough money; it's equally the fact that money has been spent on the wrong things or in some cases on nothing.

There is no single model which will be correct; the truth is, you need a range of approaches because the size of the deficit is reasonably large and the traditional ways of funding it – that is, government paying through debt or equity – are constrained because all governments in Australia except Western Australia (WA) are unlikely to run significant surpluses any time soon.

All governments, except WA and the Commonwealth, have limited borrowing capacity, so government will have neither debt nor equity of the scale necessary to build the infrastructure.

The real need is for better procurement processes in the public sector, by which I mean planning as well as actual procurement. That is what bodies like INSW are hoping to achieve. We need a big picture view via a pipeline of prioritised projects. Then we need all options to help fund that pipeline.

How is NSW positioned in terms of evolving procurement practice?

The state is doing much better. INSW is one year old now but has only been fully operational for nine months. We are trying to take a whole-of-government approach rather than an individual agency approach.

This is a new approach and traditional agencies find it difficult because it involves them giving up their sense of unique purpose and power. This has improved, but it is not yet perfect.

We are also trying to have a whole-of-governments approach, which means that INSW and Infrastructure Australia (IA) talk to each other and work off similar assumptions. We try to have both governments broadly on the same wavelength, which means that if there is a benefit cost ratio of X on something it will be similar at both state and federal level. The relationship between the state and Commonwealth government has improved substantially from where it was, which was nowhere, so progress has been made.

How is INSW's 20-year strategy progressing?

In September our 20-year strategy will be released and it is progressing. The first draft is ready and we have developed a new and courageous process.

At the same time, the Department of Transport is releasing a master plan, the Planning Department is going to release a metropolitan plan and the government is responding to all of these in November because all the plans need to be brought together.

The idea of our plan is to move beyond the electoral cycle and beyond politics; these are ambitious objectives which may not be achieved 100 percent, but it can't be worse than it has traditionally been. We want to provide an objective judgment to government on projects.

"There is no single model which will be correct; the truth is, you need a range of approaches..."

"It is not for us to manage the politics but there is massive global appetite for these assets."

While government needs to think about politics when it makes decisions, at least it will have our objective judgment and if it has a different view it will have to explain why. It's early days in terms of whether this process will add as much as we hope, but it does mean that by the end of this year there will be a prioritised pipeline of projects in NSW.

There will also be a system-wide view as to what things look like from which the projects flow. But it won't tell you how it all gets paid for. That is one of the difficult questions in all of this.

We will create a plan and there will be a response from government, but none of it becomes real without capacity to deliver. We will have some views on that but we don't decide how the government manages its balance sheet.

What I've described will happen and it is a vast improvement on what NSW has had before but we are not empowered to make choices about funding and that remains the difficulty given the state of public sector finances.

When the list of priorities is released will there be a representative from government liaising with the investor community to try to build confidence in the procurement model given the issues in the past with projects like Sydney Metro?

Some projects have been iconic in destroying investor confidence. Sydney Metro in particular, but government procurement in NSW in general over the last 10 years has been iconic in the wrong sense of the word. We have a global reputation for failure. The new government and INSW are very keen to avoid that situation.

I was in Europe recently and was asked why someone should believe anything will happen with the North West Rail line; I don't think there is a good answer to that except making it happen. The only way to change the reputation of Australia and NSW in particular is actually turning our plan into practice.

Sydney Desalination is a good example of that and hopefully Ports will also be. The sale of the generators is difficult and different. Much needs to happen.

What is your view on the sale of 'poles and wires' businesses and the impact this could have on the provision of infrastructure?

The government has taken a position on the sale of poles and wires which it will stick to – that it won't sell them without a mandate. It remains my view and everyone's view who understand it that the only assets that can fix the balance sheet in a serious way and move the needle on infrastructure in Queensland (QLD) and NSW are the poles and wires.

It is not for us to manage the politics but there is massive global appetite for these assets. They are regulated, there are no jobs at stake and the price impact will be down not up, so there is no substantive political risk.

Nevertheless both governments need to make up their minds, but eventually these assets need to and will be sold; if they are not sold no government will be able to do as much as it wants to in the infrastructure space.

Is there significant potential for asset sales outside poles are wires businesses?

There is and the government is working its way through the obvious options – Port Kembla and Port Botany and the generators and you need to include Transgrid. There are forestry assets in NSW and there are opportunities to sell some mature toll projects where the government still has them, but the only one that counts is poles and wires because the orders of magnitude are so much greater. In NSW they are worth over A$30 billion and in QLD over A$20 billion and there is another A$5 billion per year of capital expenditure you don't need. If you combined every other opportunity for asset sales it still would not be a fraction of poles and wires.

There is a political concern which will either be resolved or not and then there is the financial reality, which is that these are the only assets that count in both states. NSW should still do other smaller, digestible assets, but in terms of moving the needle on balance sheet capacity for new infrastructure in both states, it is poles and wires first, second and third.

What are the implications if the poles and wires assets are not sold?

Government will make their own political choices, but if they choose to not go ahead it will be disappointing for INSW and the industry, but as long as it is clear and they don't have a 'Blue Hills' situation, the world will go on. The money that wants to buy poles and wires in Eastern Australia can go anywhere in the world. It would like to come here because they are nice assets and they like the legal structure. But if that money doesn't come here it will just go somewhere else.

The public-private partnership (PPP) model has suffered from some bad press in the past. Are there refinements to the model that could help?

There is no single model – there are a number of models to consider. There have been failures in PPPs where the private sector has lost its equity almost completely. Taxpayers haven't lost out, but

there is no doubt there has been a tainting of the model. No one wants their tunnels or roads to go broke; even if it doesn't cost the taxpayer, it doesn't look good.

It is 100 percent clear that PPPs are part of the answer; without PPPs you don't have the mixture of funding sources that can meet the demand. So there will be more PPPs in social (health, justice and education) infrastructure, and in economic infrastructure.

Victoria has just had a PPP go broke in the corrective services space; that is a pity but it doesn't tell you PPPs are not part of the answer. It tells you that the players – both government and private sector – make mistakes. PPPs – both social and economic, and both user-pays and availability/ government-pays models – are here to stay.

The important thing is to structure each PPP in a way that is case appropriate – that deals with the specific risks of a particular asset and slices, dices and prices risk in an appropriate way.

There are models which will come into play where the government takes some of the risk – perhaps some of the upfront risk. Superannuation funds do not want to take construction risk; they don't even want to take ramp up or patronage risk. But some other players might be willing to take some version of that or collar-and-cap risk, where the downside risk and upside potential are capped.

There are many models and we are moving in the right direction, but we need to have confidence on both sides – particularly confidence from the private sector that the government is competent and honest in its dealings – we haven't always had that.

What is your sense of current sentiment within the private sector about working with government?

Hopeful, but cautious. PPPs such as Gold Coast Rail, prisons in the Northern Territory and Victoria and the NSW Convention Centre have all attracted significant and high quality interest. But they have been relatively small. The harder challenge is the multi-billion projects, which are big for Australian institutions and big for Australian construction companies.

NSW has an approach which we strongly support on North West Rail, which tries to break it up –it has some PPP and some design and construct (D&C). The hard question is, how do you do economic infrastructure where the total capital costs are in the billions?

Have you seen any interesting approach offshore in terms of dealing with these types of large infrastructure projects?

There haven't been too many double digit billion PPPs; the experience overseas has been predominantly moving towards the availability-style, where the private sector risk is very limited. I understand why the private sector would like that, but I am wary of lurching to that position.

Around 25 years ago I started toll roads and water treatment plants in Sydney and arguably the government might have taken too much risk. We generally did it well and they were successful. Over time governments and treasuries have become greedy and the private sector became a bit too competitive, so we went towards the private sector taking too much risk. Some of that has ended in bad outcomes for the private sector.

It is easy to push the pendulum right back to the other extreme but I doubt that is the answer. The answer is to have a series of models depending on the project. There will be some availability approaches where the government takes the preponderance of risk, but I don't believe all demand risk is gone forever. It is different if you buy it after two years versus one day. The demand risk is also different depending on pricing models and all sorts of other things. We need an open discussion rather than one definitive approach.

To what extent will more super fund investment solve the funding issue?

The super fund industry won't significantly invest in greenfield assets. In brownfield assets there is massive demand and investment in listed infrastructure, so in some ways it is a low order issue.

For 10 years we have been hearing that super funds are the natural owners of infrastructure and in some ways they are; but they are only the natural owners if they can get their return over 25 years with an acceptable risk profile. There is money and willingness to participate; the issue is to put forward proposals that meet the parameters of the super funds.

The problem is not the money, it is that super funds want a return and someone has to pay the return. It is either the users or the taxpayers – there is no one else available to pay that return. So in some ways the super argument is a bit barren. Everyone agrees it would be nice if Australian super funds were more involved in Australian infrastructure, but how do you structure the opportunities and how do you pay?

If you are not willing to have truck drivers pay for using transport or to have the state government pick up the availability payment for the Exhibition Centre, who else will pay? You have to be willing to either fit it into a state budget and /or have user-pays.

You also have to create a liquid debt market, which is a significant issue given the structure of the Australian super fund market. Otherwise, even if it is a good investment on other parameters, investors won't and shouldn't participate.

Are you satisfied with the level of engagement by the banking industry?

Banks around the world are keen to invest in Australian infrastructure, and Australian banks are not the problem; the problem is government. It has to be, because they are government projects. It is not as if there is a massive pipeline of fundable projects that banks are refusing to do; the problem is the absence of a prioritised and fundable pipeline. That is what we hope to make a contribution towards.

Other states, particularly QLD – are also likely to do the same. Given the nature of public sector balance sheets, it is a hard task. That is why asset recycling and user charges are so important because they are the only two broad ways to create capacity.

"INSW does not believe the answer to every problem is building something. Using what you've got better is part of the answer."

What are your views on the merits of a sovereign wealth fund with a mandate to invest in infrastructure?

I doubt it would help. The Federal Treasury has said clearly is does not think it is necessary to have another fund apart from the Future Fund. I'm not sure that a separate fund for nation-building is better than just direct government spending. The question is, how do you get a surplus? A sovereign wealth fund would not be a magic answer for the infrastructure sector.

Once you have delivered the 20-year Plan what is next for INSW?

The process needs to be ongoing, so there will be five-year resets. The nature of what we do will, I suspect change – we will become a specialist adviser to government on particular projects, like an infrastructure central agency that gives advice from inside the government rather than reviewing projects from outside the government.

We are delivering the Exhibition Centre and like QLD and Victoria I suspect we will become the overarching delivery agency for privately-funded activity.

That is my view but it has not yet been decided – the government will need to resolve that.

Is franchising an important approach?

The government's view, which I agree with, is that you should fix what you've got and then move to franchise rather than franchise something that is dysfunctional.

What role can productivity improvement play in the future?

INSW does not believe the answer to every problem is building something. There is a real role for productivity improvement. Rail is an obvious arena for this and the government has an ambitious project to do this. Using what you've got better is part of the answer.

Demand pricing is also an important part of the solution. If a road is crowded the answer might be to build another road, but equally it might be that if you charge people at certain times of the day they might change their timing and the road will become productive without spending billions. You can't isolate physical infrastructure from pricing.

Is the carbon price too high?

Robert White
Associate Director
Environmental Finance Solutions
NAB Advisory

Dinush Kurera
Associate
Environmental Finance Solutions
NAB Advisory

What a ride. After years of, at times, acrimonious debate Australia now has a carbon price. This event alone however has not stopped the positioning and rhetoric.

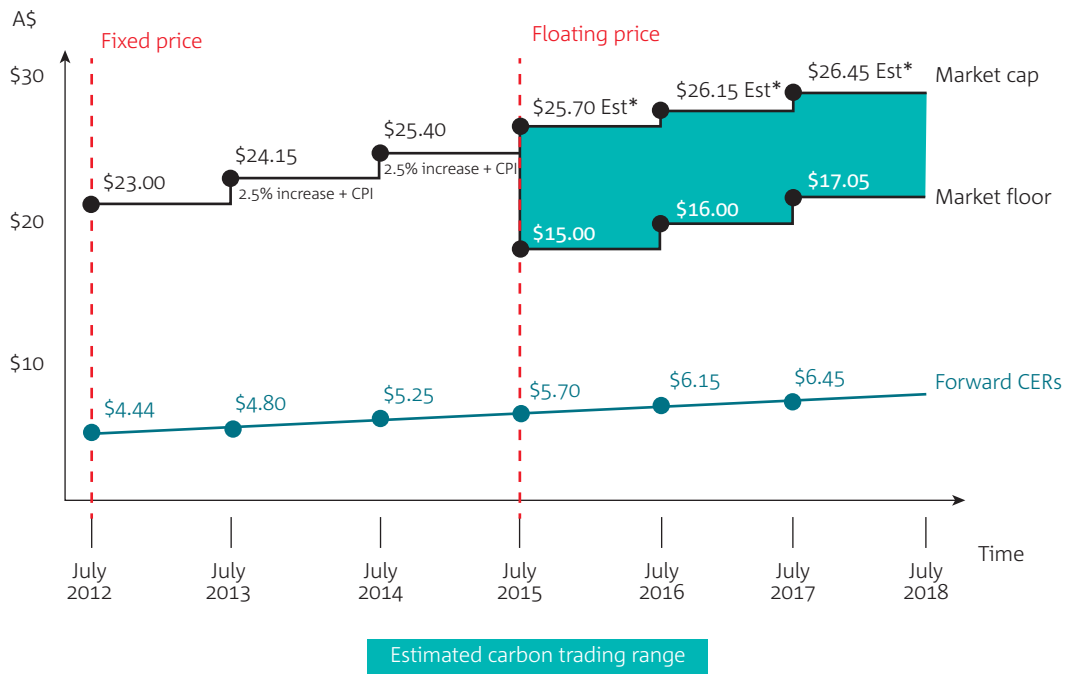
With a starting price of $23 per tonne a cacophony of voices are rising up to say that the price is too high. Industry associations such as the Australian Industry Group and the Business Council of Australia have called for the fixed price to be lowered to a $10 per tonne starting price - and the opinion sections of most major newspapers echo similar concerns.

All compare our $23 per tonne price with Europe's current price of approximately $9 per tonne and naturally ask why ours is so much higher.

To put this into context, it is worth looking at both the forecast price ranges for the carbon pricing mechanism (CPM) versus European Union emissions trading scheme (EU-ETS) prices since 2007 (Charts 1 and 2). When you overlay Australia's fixed price range (the green band in Chart 2), the price does appear rather high compared to Europe's current low prices. Mind you we haven't experienced anywhere near the crushing impact that the European sovereign debt crisis and fiscal austerity measures are having on their economy.

However, before conclusions that the Australian price is too high can be drawn (even in the context of Europe's ailing economy) it is important to take a step back and look at the whole structure.

Chart 1: Australian carbon price mechanism – forecast price paths



*Estimate is for $20 above expected international price for that financial year. These estimated figures were derived from the AUDEUR forward rate and CER curve as a proxy to international prices (as at 4 May 2012)

#The collar arrangement will be in place for three years, following this the collar will be reviewed

Source: NAB, Reuters, May 2012.

"What is required is a balance to allow a least-cost transition of the economy, while providing a long-term price signal for people to invest in."

Is a tonne a tonne?

As climate change is a global problem almost all emissions trading schemes are designed to allow some linkages outside of their domestic schemes. This has the effect of increasing supply from a potentially unlimited source (at the right price).

Should this matter – after all, a tonne reduced domestically is the same as a tonne reduced overseas? We all share the same atmosphere so from a climatic perspective this stacks up, however such an approach ignores the need for economic transition – the requirement for our own current emissions-intensive economy to move towards a lower emissions-intensive economy in the future.

In Australia we have bipartisan support for a five percent emissions reduction by 2020 (from 2000 levels). The key question to look at in the design of our scheme is: how much reliance to place on imported permits in meeting our reduction commitments.

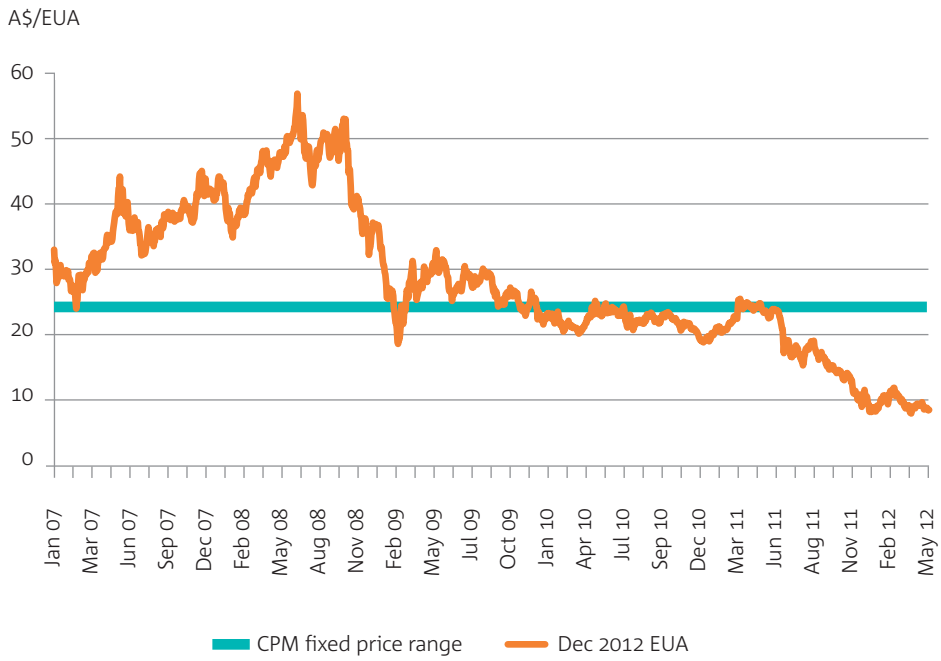
Risks to imported emission reductions

Currently, the only available international scheme for the importation of emission reduction permits is the United Nation's Clean Development Mechanism (CDM). The CDM has been designed to transition developing economies towards investing in lower carbon-intensive technologies and products, by generating Certified Emission Reduction (CER) permits that can be traded and monetised.

This scheme is currently experiencing a vast oversupply of permits, largely due to Europe's downturn, as Europe is the only significant demand centre at present. Traditionally sovereigns have also acted as a source of demand, but with the Kyoto protocol due to come to a close at the end of the year, those nations who were active in the market have practically all made their purchase commitments.

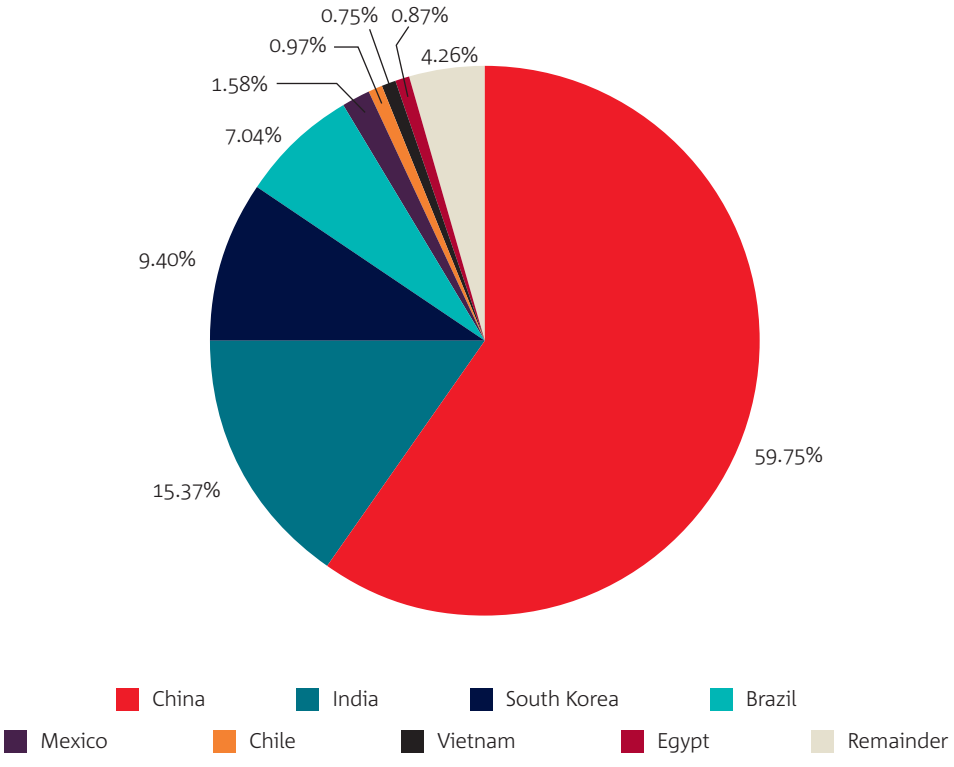
Chart 3 shows all the CER permits issued under the CDM by country of issuance. The top five countries – China, India, South Korea, Brazil and Mexico – make up 93 percent of the market, and all of these have either locked in or are moving towards committed emission reduction targets (Illustration 1).

Chart 2: ICE December 2012 EUA futures prices in A$



Source: NAB, Reuters, May 2012.

Chart 3: CERs issued by host countries



Source: United Nations Environment Programme (UNEP) Risøe Centre, May 2012.

There is a real risk that the top five CDM countries will look to dramatically reduce their export of emission reductions, in order to use them to meet their own domestic targets.

Another supply side risk comes from the point of import. The EU-ETS will not be accepting CER permits from projects registered after the end of 2012 that do not come from Least Developed Countries (LDCs).

Does this raise the spectre of country specific restrictions reaching our shores at some point, further restricting supply? Regardless, due to actions by the major developing countries, CER permit volume is likely to become constrained post 2020.

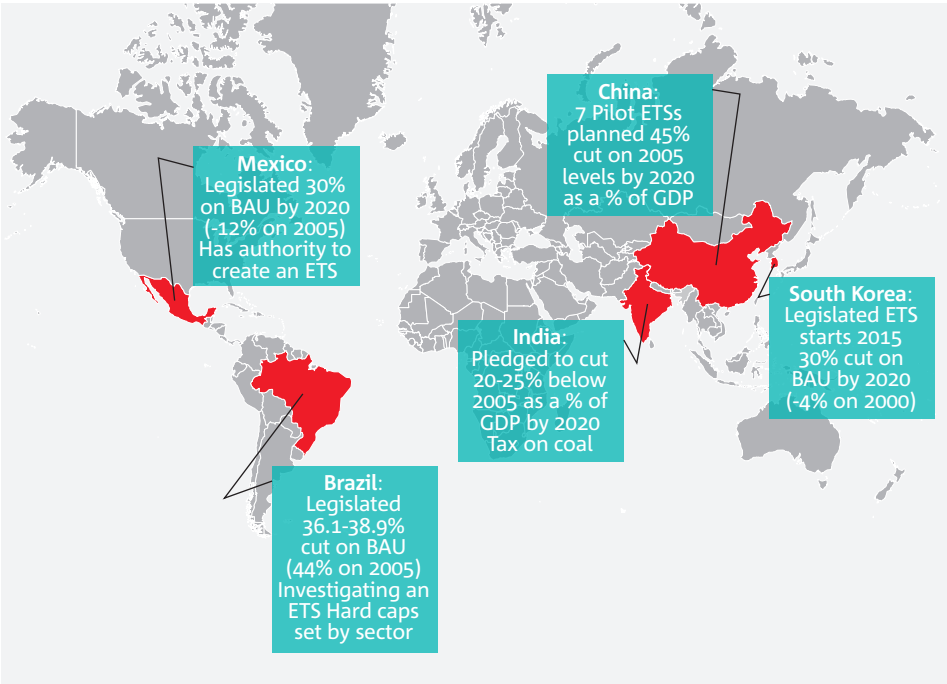
Another import risk is posed by project type. Chart 4 shows the number of CER permits issued under the CDM by project type. Almost 70 percent have come from the destruction of industrial gases. These projects will be banned from the EU-ETS in May 2013, with New Zealand having banned them from their ETS at the end of 2011 (forward contracts are exempted until June 2013).

While Australia has not yet announced the same restrictions, there is a mechanism within the legislation that allows permits from particular projects to be banned, and we strongly expect CER permits from the destruction of industrial gases to be banned by the time the flexible period starts in 2015.

Non-governmental organisations (NGOs) such as CDM Watch, also highlight that industrial gas and large hydroelectric and coal projects (which make up a large proportion of forecasted projects), have limited or controversial sustainable development benefits and questionable additionality. Therefore, we can expect increasing pressure to either remove these from the CDM altogether, or further import restrictions to be brought in at the country level.

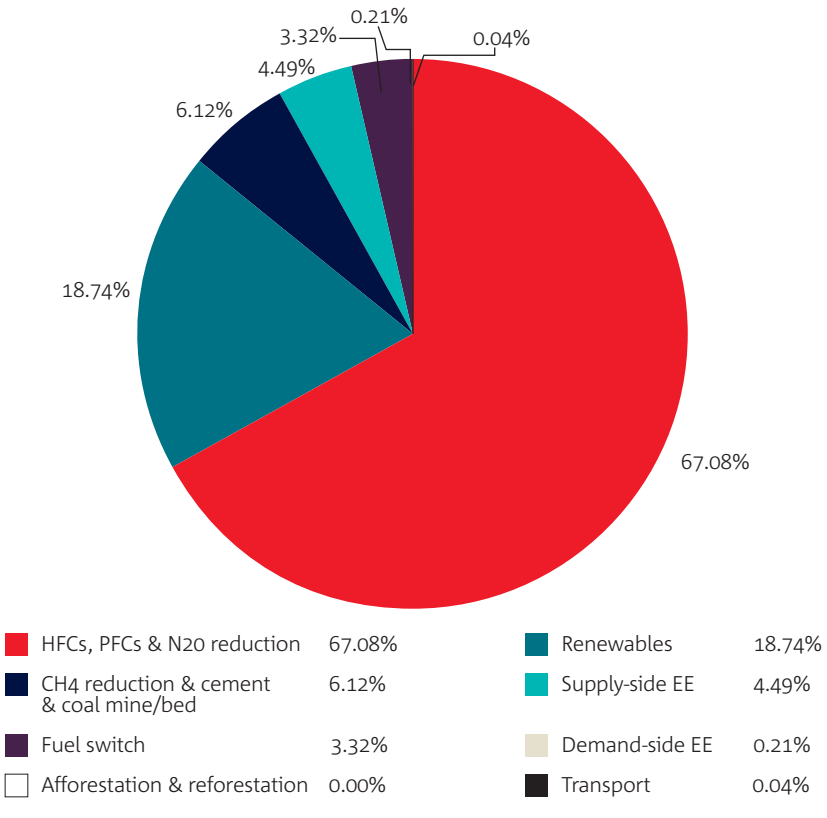
There is a real risk that imported permits will increase in price over time, and most likely quite suddenly as the changes will be driven by policy decisions restricting supply, rather than a gradual increase in demand. But this figure is likely to now be greater, as

Illustration 1: Emission reduction commitments by top five CDM host countries



Source: Bloomberg and Point Carbon, 2012.

Chart 4: CER permits issued by project type



Source: UNEP Risøe Centre, May 2012.

South Korea has proposed to ban the use of CERs within their own scheme until at least 2020; removing a much needed demand centre.

Of course other countries will potentially step in, but logistically this is expected to take time and is marked with the difficulty of bringing projects to life in LDCs. Notwithstanding that these risks also need to be looked at in the context of broader developments.

If the previously mentioned countries begin restricting their exports, it will be a strong signal that the world is taking action to reduce emissions. Therefore, supply will begin to decrease at the same time that pressure mounts for Australia to increase its emission reduction commitments, raising demand for imports – a double squeeze.

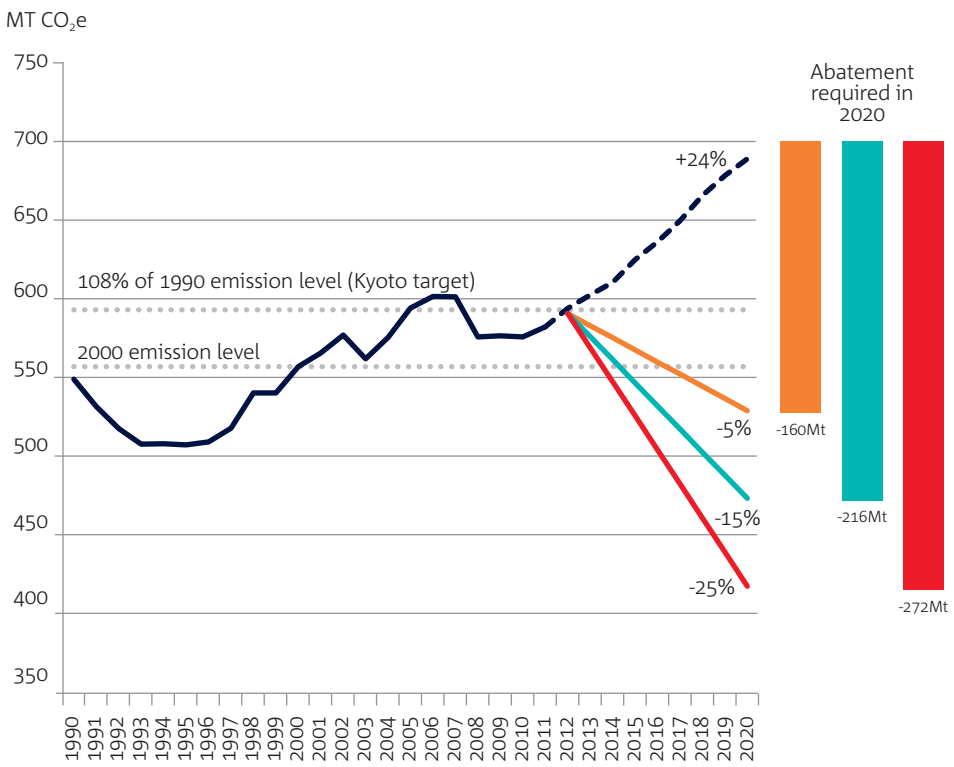
Until then however, the world is facing a chronic oversupply of permits, making the lure of cheap imports all too appealing. Figures from Bloomberg New Energy Finance predict an oversupply of CER permits of more than 150 Mt before 2020. But this figure is likely to now be greater, as South Korea has proposed to ban the use of CERs within their own scheme until at least 2020; removing a much needed demand centre.

Despite this immediate medium-term oversupply, a 100 percent reliance on imports is not a viable long-term solution. It is likely to send Australian dollars offshore and provide little incentive to proceed with investing in energy efficient machinery or to make the transition away from more intensive forms of power generation.

Thirdly, and most importantly, it neuters the scheme, leaving the economy bearing all of the administrative costs of compliance without any actual change occurring. Just because international offsets can be brought to market at $4 per tonne does not necessarily mean that this supply should set the domestic price, especially when these low prices could remain until 2020.

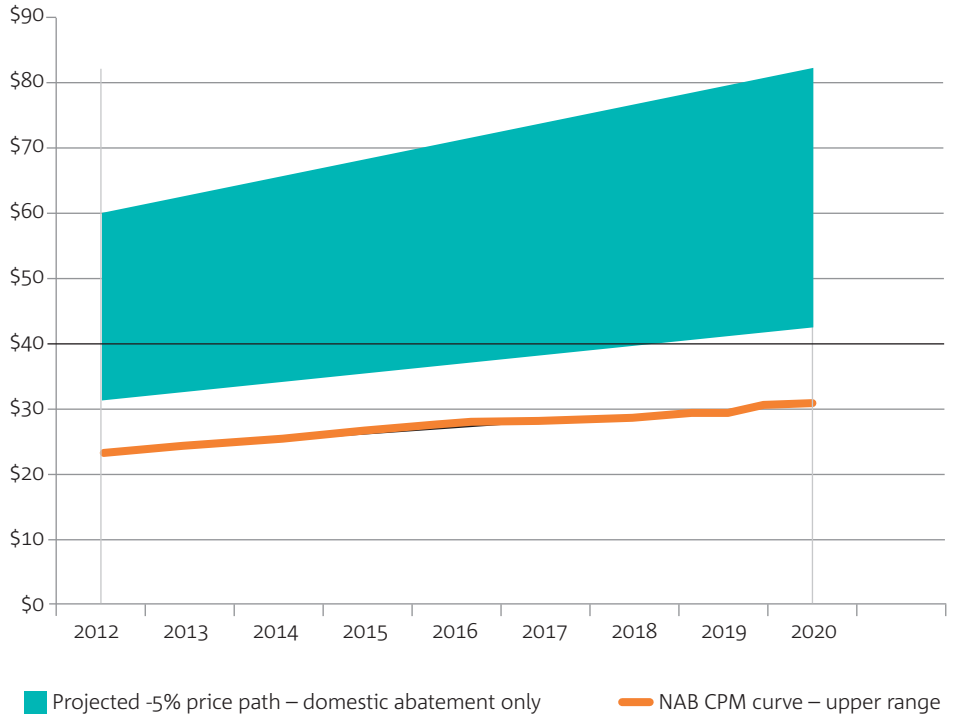
It is exactly this reasoning that has led to South Korea's decision to ban CERs until 2020 at the latest. They want their scheme to be effective and drive change at home.

Chart 5: Australia's emission reduction pathways



Source: Department of Climate Change and Energy Efficiency, May 2012.

Chart 6: Emissions prices – CPM vs. domestic-only abatement



Source: ClimateWorks, National Australia Bank, Commonwealth Treasury Department[1], 2011.

1. NAB CPM curve - upper range: this is based on the fixed price for the first three years of the scheme, the estimated ceiling price for 1 July 2015 - 30 June 2018 (Chart 1), and then uses the CPM curve provided by the Commonwealth Treasury Department: *Strong growth low pollution: modelling a carbon price*, 2011.

Domestic emission reductions

Chart 5 shows Australia's projected emissions under business as usual, and then our abatement trajectories under a 5 percent, 15 percent and 25 percent cut by 2020 (from 2000 levels). Currently we have bipartisan support for a 5 percent cut – a 160Mt abatement challenge.

So where will this come from if we were to only reduce emissions domestically and not use imports?

The most comprehensive study on the domestic abatement opportunity in Australia (to date) has been undertaken by ClimateWorks. This has formed the basis of their low carbon growth plan[2], building on McKinsey and Company's 2008 analysis[3]. Using ClimateWorks' marginal abatement cost curve (MACC) we can determine that Australia can meet its 5 percent 2020 reduction target of160Mt at a price of approximately $42 per tonne in 2020.

This research is slightly dated and therefore grossly overstates the cost of renewable power, especially solar photovoltaic which has dramatically come down in price since the original report was commissioned. However it does provide a useful guide to domestic abatement, and is worth using to provide context to the effort required if Australia was to ignore imported permits altogether.

Given the degree of international commitments now being made by developing countries it could also be argued that a -15 percent 2020 target may be put forward by the newly formed Climate Change Authority. If so this would require a price of approximately $81 per tonne in 2020 if the 216Mt of abatement required could only come from onshore.

MACCs offer a slightly simplified view of abatement as they capture a number of sources of reduction that already make economic sense without a carbon price, but are not occurring. Conservatively we can assume that any additional price impost would not make any difference. In effect there are structural barriers in place that a price alone cannot remove. If the identified abatement of approximately 50Mt is removed, a price of approximately $82 per tonne is implied by 2020 to reach the -5 percent target.

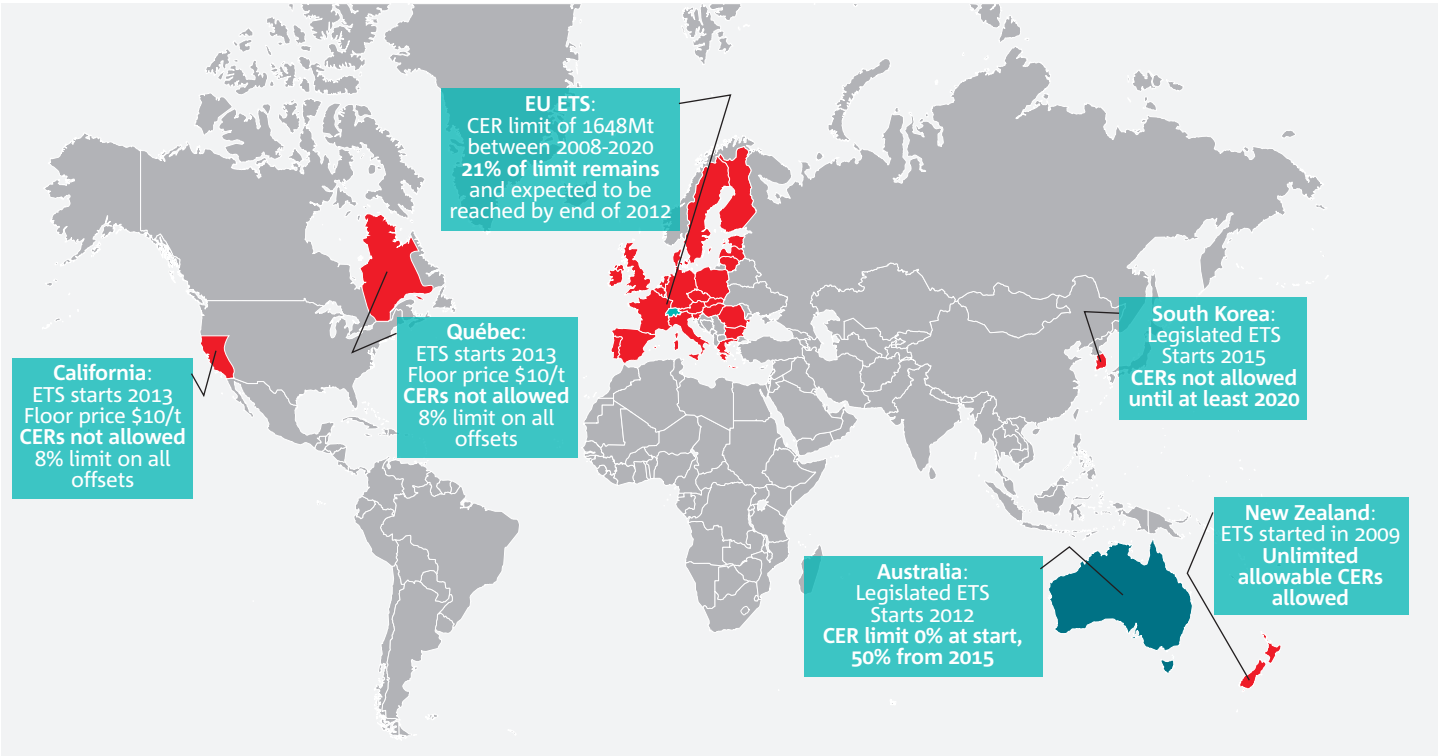
Chart 6 brings these figures back from 2020 to today, and implies a $31-$60 range for starting prices for a 5 percent reduction based solely on domestic-only abatement – clearly illustrating that relying only on domestic abatement opportunities would be too great a burden.

Timing

It all comes down to timing. The least impactful approach today would be to rely on cheap CER imports to meet our emission reductions. However, for the reasons mentioned earlier this could leave us in hot water later. On the flip side, 100 percent domestic abatement would burden us with punitively high costs today.

What is required is a balance to allow a least-cost transition of the economy, while providing a long-term price signal for people to invest in. With 100 percent imports there is a serious risk that the transition will never occur, as we need a strong enough price signal to ensure that long run infrastructure investment decisions made today, are not locking in a higher emissions outcome that would ultimately cost us more in the long run.

Illustration 2: Import restrictions in various emissions trading schemes



Source: Bloomberg and Point Carbon, 2012.

2. ClimateWorks Australia: *Low carbon growth plan for Australia*, March 2010.
3. McKinsey & Company: *An Australian cost curve for greenhouse gas reduction*, Feb 2008.

It is this restricted approach to imports that other countries have followed. Illustration 2 shows what some of our peers are up to. At a 50 percent importation restriction from 2015 Australia has one of the more generous schemes, second only to New Zealand which has no restrictions. New Zealand was expected to bring in restrictions when the government announced changes in July, however this decision was surprisingly absent. Regardless, Australia's limit is generous – particularly in the context of South Korea's recent announcement – and therefore it leaves us open to arguments for either extending the floor period indefinitely or tightening the use of imports.

In addition to import restrictions, floor price mechanisms are also gaining popularity. The United Kingdom recently brought in a floor price for local companies that are covered under the EU-ETS in an attempt to encourage investment in all forms of clean energy. The floor price will be introduced in 2013 at GB£16 (A$25.70) per tonne and will reach GB£30 (A$48) per tonne in 2020[4]. Quebec and California will both have floor prices when their schemes start next year, with forward permit prices for the Californian scheme currently trading at around US$19/t - not too far off our fixed price of A$23/t. China is also actively investigating the use of a floor price in some of its pilot schemes.

Back to the CPM

The key for the first three years of the CPM is that no imported permits are allowed. So if we were to conclude that the policy demands domestic abatement only, then the fixed price is probably a little low. Of course, given the transition to the flexible period is only three years, with the subsequent allowance of cheaper CER permits, the only domestic abatement we can expect to occur will be those with a three year payback; an insignificant amount.

In effect the fixed price becomes less effective. It is the floor – both its price and tenor – along with the allowance ratio for imports, which will drive decision making over the long run.

To align these mismatches we can argue that the fixed price and the floor need to be linked, and the floor period extended. As to how – that is a whole other debate. Certainly when you look at what measures Australia has in our scheme, we are not out of step with our peers, all of whom (bar New Zealand) have restrictions on imports and/or other price controls such as a floor.

So is the price too high? Not if we want a scheme that will deliver domestic abatement and ready the economy for a low carbon transition. Ultimately it is the long-term price path that matters, and in the face of the current oversupply of cheap CER permits, it is the floor price that provides this path.

4. Financial Times, *Carbon floor price boost for 'green' power*, 23 March 2011.

Infrastructure and productivity:
what is the impact of the infrastructure deficit?

Rob Brooker
Head of Australian Economics & Commodities Group Economics

There has been considerable discussion around the factors driving Australia's relatively poor productivity performance over the past five years. In *The productivity slowdown: what does it mean?* article in our *Corporate Finance Insights* February 2012 edition, we identified that much of the recent decline in observed productivity is probably driven by the capital expenditure surge in the mining and utilities sectors.

We have seen substantial investment and employment growth in these sectors but, because of long lead times, we are yet to see the rise in output. The simple mathematics of the productivity measure, output divided by input, means that if employment growth exceeds output growth in a given sector then labour productivity has to decline. The very wide sectoral divergence in productivity growth over recent years is illustrated in Chart 1.

However, there continues to be considerable commentary from the government, media and private sector identifying the poor state of infrastructure as the driver of Australia's decline in productivity[1]. While an appealing storyline, it is overly simplistic.

Lack of infrastructure is unlikely to affect labour productivity, because it reduces growth in both outputs and inputs. Rather, it impairs economic growth and increases the risk of unemployment of both labour and capital.

While the question regarding structural productivity remains critically important for the future prosperity of Australia, so too does the question of adequate provision of economic infrastructure and we examine that in more detail in this article.

Infrastructure adequacy: how bad are the bottlenecks?

Economic infrastructure is the physical capital providing essential services for economic activity, including transport facilities that have general access rights (such as roads, rail tracks, ports, harbours and airports), utilities (such as electricity, gas and water supply, and waste disposal) and telecommunications carrier facilities (such as access to spectrum and cable).

Economic infrastructure complements the private inputs to production and can be accessed by private users through licences and similar arrangements. Insufficient infrastructure capacity may jeopardise the potential for economic growth by creating bottlenecks and congestion.

Evidence about the adequacy of Australian economic infrastructure is difficult to obtain. There are few indicators of infrastructure performance that have been published in a consistent way.

Privatisation of infrastructure means that it is not easy to determine whether rising costs reflect supply shortages or the achievement of commercial rates of return.

Crude indicators tend to be inconclusive. In the area of freight and passenger transport, for example, volumes of tonne-kilometres per kilometre of improved road have grown five-fold since the early 1970s, so either our roads have become more productive (eg. more multi-lane highways) or more congested (Chart 2).

"Given the tight fiscal consolidation implied by the Commonwealth's latest budget, an infrastructure deficit poses a significant risk to Australia's economic growth."

1. Examples include Infrastructure Australia's June 2011 Report to COAG *Communicating the Imperative for Action* and subsequent reported comments by Infrastructure Australia and the OECD on the linkage between poor infrastructure and the decline in productivity.

There is evidence of what can happen when infrastructure capacity is inadequate. For example, while ship turnaround times for our capital city ports have generally improved over the past two decades, coal vessel queues outside Newcastle reached alarming levels during the first mining boom (Chart 3). Congestion subsequently declined as demand fell during the global financial crisis (GFC) and port capacity was increased.

Engineering construction in the areas of transport and utilities outside the mining states has recently increased relative to the size of the economy. This may mean that a need for additional infrastructure has been recognised.

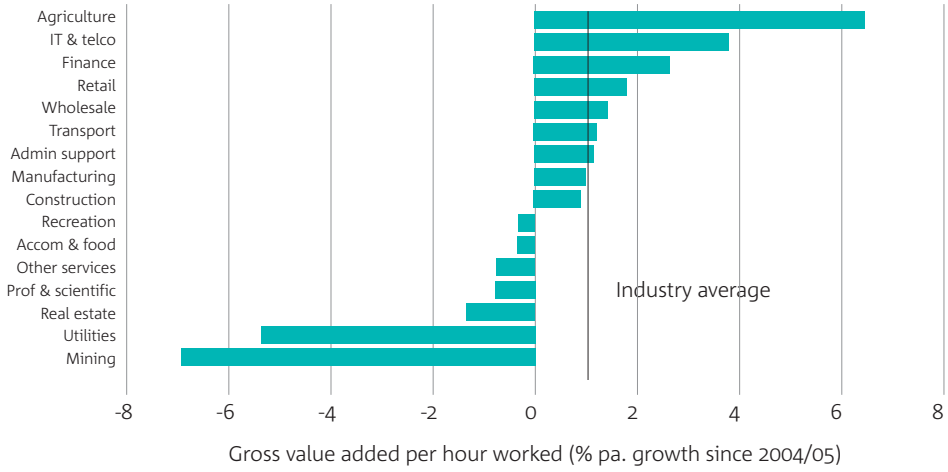
Chart 4, which includes roads, highways, subdivisions, bridges, railways and harbours, reveals a marked rise in transport engineering construction in recent years relative to gross domestic product (GDP). Chart 5 shows a similar pick up in the case of utilities, reflecting water supply projects as well as the commencement of the National Broadband Network (NBN).

The situation in the mining states is more difficult to discern because of the high levels of investment in private infrastructure (roads, rail, ports, pipelines, etc) associated with the mining sector.

There are emerging constraints in the capacity of the Australian economy to maintain higher rates of investment in infrastructure. The mining investment boom is placing heavy demands on the construction sector at a time when there are strong requirements for infrastructure elsewhere in the economy.

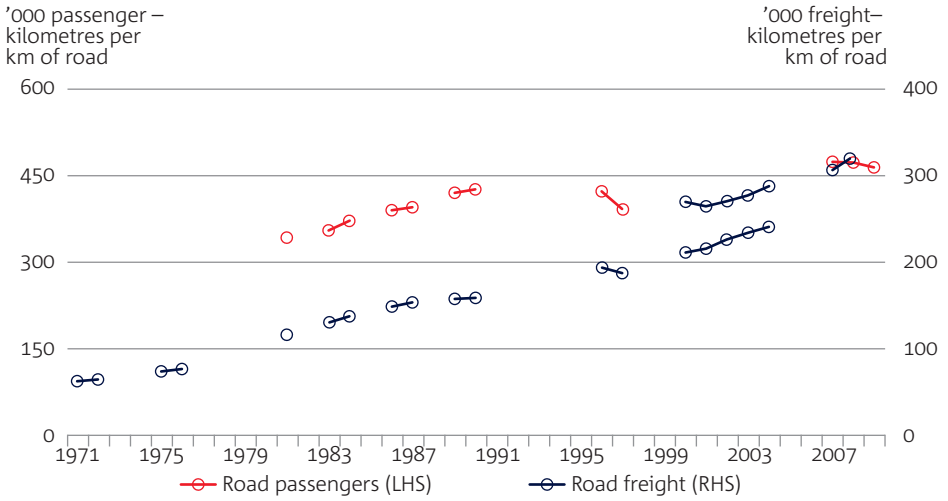
The NBN and new urban transport projects will require a significant allocation of resources over coming decades. There is a risk that the mining sector may place extra demands on scarce construction industry resources that would otherwise be engaged in large infrastructure projects and housing construction, at least in the short-term. It may also be adding to cost pressures in the construction industry.

Chart 1: Measured labour productivity growth by sector



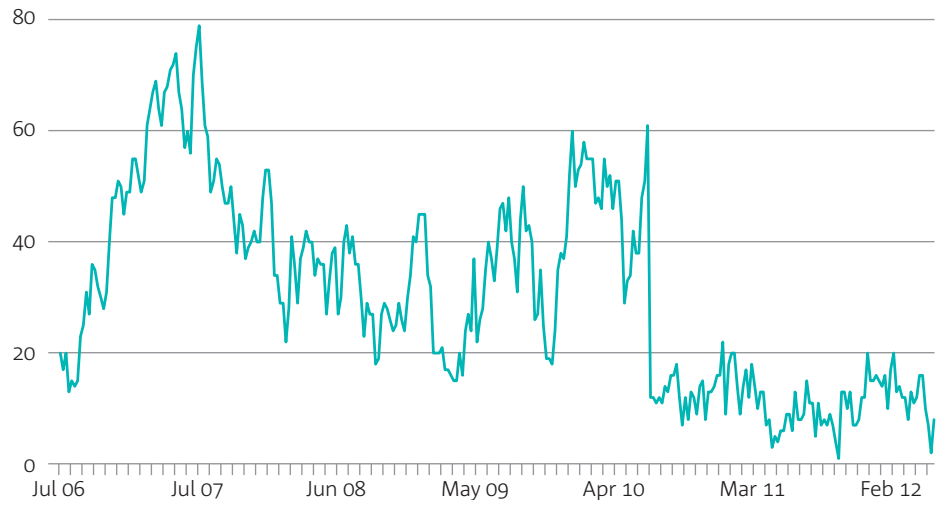
Source: ABS and NAB calculations, October 2011.

Chart 2: Road passenger and road freight mover per kilometre of improved road



Source: Bureau of Infrastructure, Transport and Regional Economics (BITRE), NAB, March 2011.

Chart 3: Ships waiting off Newcastle (number, weekly data)



Source: Bloomberg, May 2012.

The impact of the GFC on public-private partnerships (PPPs) and financing

The increased reliance on private sector funding, PPPs and involvement in infrastructure increases the vulnerability of infrastructure funding to volatility in financial markets, which is likely to continue over the next few years.
Since the GFC, the proportion of transport engineering construction provided under PPPs (such as toll roads) appears to have declined sharply (Chart 4). Utilities infrastructure is now more reliant on private sector decisions following the privatisation of Telstra and many electricity generator and transmission assets (Chart 5).

Consequently, there may be a greater need for direct government borrowing to support infrastructure at a time when governments are seeking to reduce their indebtedness.

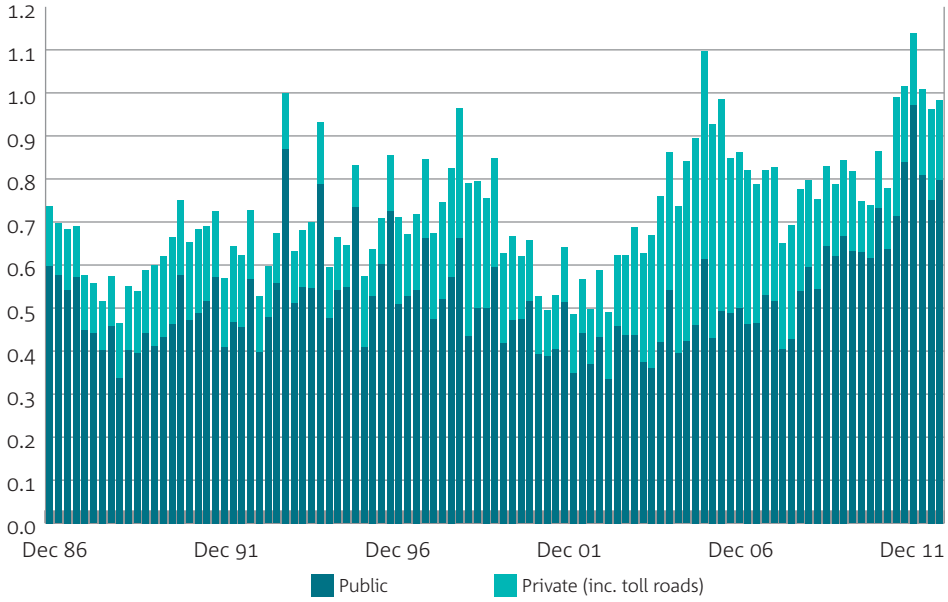
Fiscal constraints imposed by state governments in the pursuit of fiscal surpluses may be contributing to an infrastructure deficit, yet increased borrowing carries the risk of credit downgrades and higher finance costs (see, for example, the response to the recent South Australian state budget). State government funding is ultimately constrained by the Commonwealth and so the push to achieve a fiscal surplus in 2012-13 is unlikely to be helpful.

The availability of infrastructure funding may also have been restricted by the operation of the superannuation system, which has tended to place members' balances into listed equities rather than into infrastructure bonds, similar financing instruments or the banking system.

There are exceptions, such as the bonds to be made available for financing part of the NBN, but they tend to be relatively minor. Furthermore, there is little evidence that the superannuation guarantee charge has raised household saving rates in Australia; rather, it has simply induced the transfer of savings out of other more traditional instruments and into superannuation.

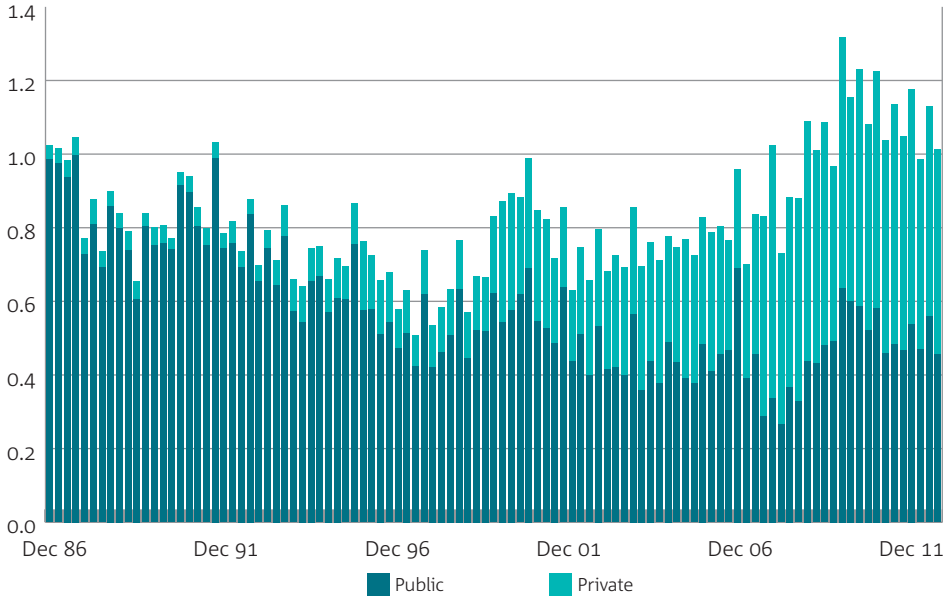
Given government fiscal constraints a persistent future infrastructure deficit is a possibility

Chart 4: Non-resource states: transport engineering construction percent of GDP



Source: ABS, NAB calculations for NSW, Vic, SA, Tas and ACT, July 2012.

Chart 5: Non-resource states: utilities engineering construction percent of GDP



Source: ABS, NAB calculations for NSW, Vic, SA, Tas and ACT, July 2012.

While it is difficult to know precisely whether an economic infrastructure deficit has already emerged in Australia, it seems likely that one will do so in the near future.

Population growth, increased demand for facilities for trading water and environmental requirements are likely to place even more strain on existing water, transport and energy assets. Given the tight fiscal consolidation implied by the Commonwealth's latest budget, an infrastructure deficit poses a significant risk to Australia's long-term economic growth.

The public-private debate in infrastructure: it is less about models and more about mindset

John Martin
Managing Director
Head of NAB Advisory

Ryan Chua
Director
Infrastructure & Natural Resources Advisory
NAB Advisory

Over the past decade a substantial body of work has developed around the 'correct' way in which governments should procure infrastructure.

There is now a fairly well accepted set of standard government infrastructure procurement models (refer breakout box on page 21) which cover a spectrum of perceived public/private sector risk allocation. But is it time to reframe how we think about the models used to develop urban infrastructure, and align public and private sector interests around the ongoing delivery of public infrastructure and services?

Despite this body of work, and the substantial consulting business that it supports, the whole infrastructure industry seems fairly dissatisfied with the approach to urban infrastructure development in Australia – and just about everyone has a few 'dud' deals[1].

This dissatisfaction might include:

- Governments who feel they are not getting the risk transfer and value for money benefits that were originally spruiked in both alliance contracts and public private partnerships (PPPs).
- Construction and facility management companies who believe the cost of bidding for infrastructure projects and the unfair risk allocation make the business case for PPPs not stack up.
- Equity investors who consider that the lack of pipeline, complex bidding processes and excessive competition make investing in Australian urban infrastructure unattractive when compared to offshore opportunities.
- Debt investors who think the banks under-price the risk associated with PPP debt, preventing an infrastructure bond market from developing.
- Service outsourcing companies who see the transport franchising model as too short-term making the business case for bidding for a franchise contract marginal.

So, how is it that both the public and private sectors can be dissatisfied with the current approach taken to infrastructure procurement in Australia? The only possible explanation is that both the public and private sectors have different performance expectations on any given transaction.

A good example can be found in the various tollroad PPPs awarded between 2002 and 2007. The Cross City Tunnel, Eastlink, Lane Cove Tunnel, North-South Bypass Tunnel and AirportLink transactions received considerable media attention as 'failed PPPs'. Certainly the investors who suffered significant financial loss on these projects would feel that way.

However, surely the government should feel like 'winners'? They persuaded the private sector to build and finance impressive infrastructure projects with a far lower government contribution than if the public sector had taken responsibility for the development. In our experience there is little triumphalism from government about these transactions, as the lack of patronage of these facilities suggest a significant misallocation of resources (and undermines the original government business case for the projects). It has effectively 'killed off' the greenfield tollroad model.

In our view, there is an underlying problem with the rationale used to manage inter-relationships between the public and private sector. The accepted wisdom involves a fairly simplistic, legalistic view on how risks are allocated between the private and public sectors.

If we review the fairly lengthy list of urban infrastructure which receive a lot of media attention (eg. the tollroads mentioned above, the Victorian Desalination Plant PPP, NSW Rolling Stock PPP, Ararat Prison PPP) it seems that when transactions are executed they are based on an overly simplistic view of risk.

"Let us end the high stakes poker seen on many infrastructure transactions in recent years and make the risks more manageable for all parties."

1. This is not just an Australian phenomenon. The United Kingdom, which was a pioneer in various forms of public private partnership, has been reconsidering how it procures infrastructure since the onset of the global financial crisis (GFC).

Standard government infrastructure procurement models

Design and construct (D&C) contracts: government runs a tender for a fixed price/fixed time contract to design and construct infrastructure. Construction project management, operations and maintenance, and funding remains with the government. Examples include smaller road maintenance and construction contracts.

Alliance contracting: more akin to a joint venture approach than D&C contracts, where the private sector contractor is motivated by key performance indicators which align with government goals rather than a fixed price. Operations and maintenance, and funding remain the responsibility of the government. Examples include major improvements to existing government-owned and operated road systems (eg. complex highway interchanges).

Public private partnership – social infrastructure: a full build own operate transfer (BOOT) model for infrastructure development which incorporates fixed time/fixed price D&C, fixed price operations and fixed cost of funding for the concession term. The asset is returned to the state at the end of the concession term (normally 25 to 30 years). In the case of social infrastructure government takes the demand risk and typically pays for the infrastructure with a known 'availability payment'. Examples include schools, hospitals and prisons.

Public private partnership – economic infrastructure: another BOOT model, but the private sector takes demand risk, usually in the form of tolls or other user pays charges. Essentially the government is selling some form of monopoly asset for the concession term. Examples include airports, ports and tollroads.

Service outsourcing and franchise models: the government outsources service provision to a private sector operator – generally for a fairly short duration (eg. five years) after which it is retendered. This could include outsourcing of the operations and maintenance of a public transport franchise. The government remains responsible for fixed asset procurement and construction, and funding.

Sale and leaseback: the government sells an asset to the private sector and then leases it back for the medium to long-term. This was used fairly regularly in the 1990s and early 2000s on government buildings still considered 'off-balance sheet'. This is often viewed as a purely financing transaction where there is relatively little other form of risk transfer.

While governments have a desire to push 'risk off-balance sheet' – in many of these transactions it has a habit of coming back in another form. It seems to me, therefore, that we need to reframe how we think about the models used to develop urban infrastructure.

Reframing how we view risk allocation

Since the global financial crisis (GFC) and the perception that PPPs have been a failure, we have had a number of suggested new models for infrastructure procurement. These include:

Hand it over to superannuation funds:
Under this proposal state governments partner with long-term equity investors (like domestic superannuation funds) who then develop the business case, and execute and invest in the development of large infrastructure projects. The big challenge for government in a proposal like this is being comfortable with whether it is getting value for money when there is no competitive pressure on the equity investors. This model also has elements of outsourcing the government's role as the primary sponsor of infrastructure development which many governments will feel uncomfortable about.

Aligned interest models:
A number of proposals try to remove the adversarial positioning of D&C contracts and PPPs, and present a model where the interests of both the private and public sector are aligned. Many of these propositions appear to be an extension of the existing 'alliance contracting' model. Once again the challenge for government is being comfortable with whether it is getting value for money and that risk is actually shared with the private sector (that it is not just 'cost plus' contracting).

Brownfield 'take-out':
Under these proposals the government takes responsibility for the design, construction, funding, and operations and maintenance of a piece of infrastructure (ie. the 'greenfield' phase). Once the infrastructure has been built and the business case is known it is then sold down to the private sector. While the benefits for private investors are clear in this proposal it does leave the most significant and difficult to manage risks with government – so it is probably a step backward.

Joint ventures and asset backed vehicles:
The United Kingdom has had some success with the use of local asset backed vehicles (LABV) for a number of urban regeneration projects. In this model the government tenders for a private sector joint venture partner with whom they create a 50:50 joint venture. The government's 50 percent joint venture contribution is the land which is to be regenerated, while the private sector provides capital and redevelopment expertise for its 50 percent share. This model certainly has some merit for potential land redevelopment and social housing projects, but is more difficult to apply to social and economic infrastructure projects.

The challenge with most of these proposals is it that they generally involve government devolving their decision making powers – which is never going to happen. Further, many of the proposed new models have reduced competitive processes which make it difficult for government to determine whether it is getting value for money. It is hard to see how any of these new models represent a significant improvement on the procurement toolkit already available to government.

The challenge is not really the model but the base assumptions around how those models are applied. The basic proposition around existing public/private interactions is that there are different degrees of risk transfer from government to the private sector.

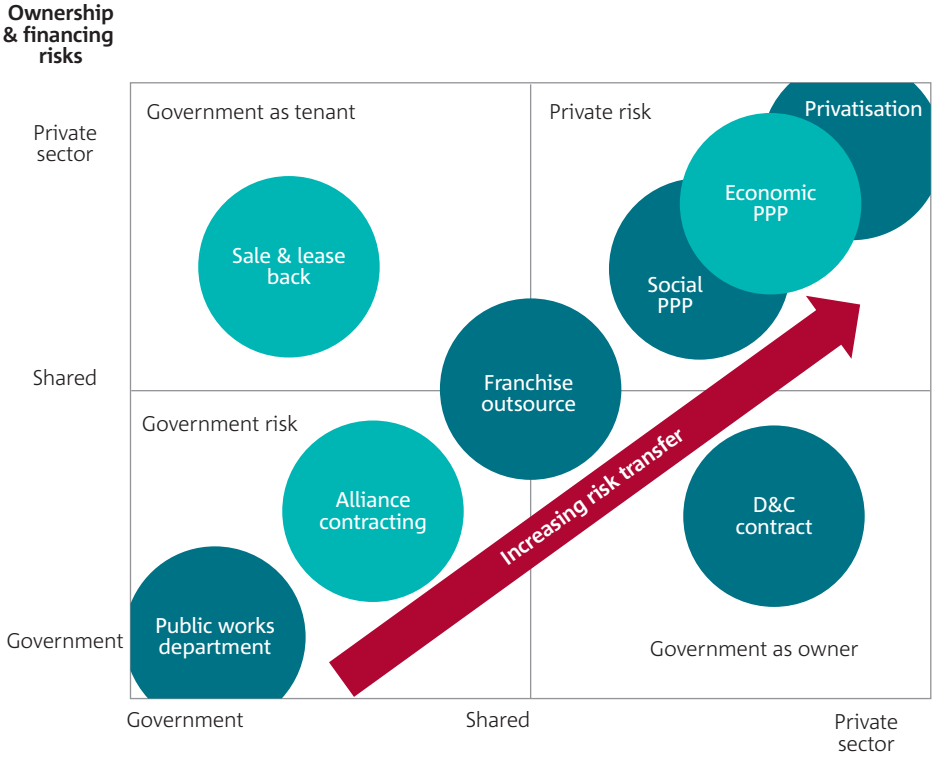
Chart 1 illustrates this traditional view by plotting various asset procurement and disposal models against the assumed legal/contractual risk allocation. It shows privatisation as the ultimate risk transfer by government to the private sector, economic and social PPPs as the next greatest degree of risk transfer, then moving down the spectrum through franchise outsourcing down to government taking on all the risk using a public works department.

While categorising the models by relative contractual risk transfer is an appealing approach, it does not capture a number of the issues revealed by the problem procurements:

Government is the provider of last resort: if a government service is outsourced (eg. by a transport franchise, hospital social PPP, road construction alliance or even privatisation) the government is the 'provider of last resort'. If a private sector supplier gets into difficulty and can no longer meet its contractual obligation then the government will typically step in to ensure the service continues to be provided to the community. While some risk transfer takes place it is not the full face value of a procurement contract and in many cases is limited to the private sector equity in the transaction.

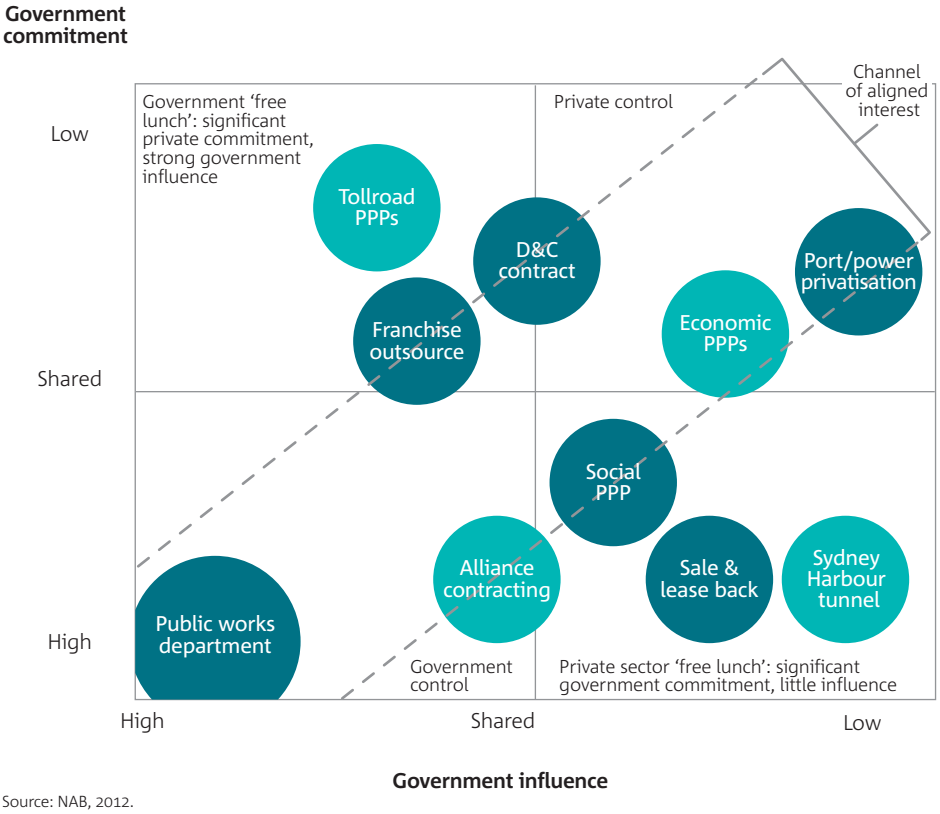
Capital structure matters: high gearing in a private sector procurement either means that there is very little risk transfer to the public sector or that the project is over-geared and there is a high risk it will be returning to the government as the provider of last resort. As corporate finance theory tells us, higher geared bids need to be risk adjusted.

Chart 1: The 'traditional view' of public/private interactions



Source: NAB, 2012.

Chart 2: The 'alignment of interests' view of public/private interactions



Source: NAB, 2012.

Flexibility is valuable: 30 years is a long time in politics. Signing very long procurement contracts limits government's ability to re-scope services. It can also place fairly unreasonable demands on private sector proponents to do some very long-term crystal ball gazing. The net effect of this lack of flexibility generally is higher costs.

Models with misaligned interests are not sustainable: a procurement model which is purely adversarial and involves a significant net transfer of wealth from the public to private sector (or vice versa) will not last. For example, while governments were able to encourage the private sector into building tollroads with wildly optimistic traffic forecasts – the private sector will now take very little patronage risk and the model is largely broken. On the other side, many of the early government property sale and leaseback transactions involved very little risk transfer to the private sector, with the net result that governments overpaid for these services (the Sydney Harbour Tunnel probably fits into this category).

Government need to retain some control over public services: in any form of outsourcing of public service, the government needs to maintain some degree of influence over the private sector operator – it cannot just be set and forget. The classic example of this issue is the rather disjointed collection of tollroads in Sydney. There have been many proposals to integrate the tolling of Sydney's roads, however the complexity of existing project deeds makes this extremely difficult to achieve at reasonable cost.

Towards an alignment of interests

If we bring these issues together, what we need to understand is not how risks are allocated but the degree to which the public and private sector interests are aligned around the ongoing delivery of public infrastructure and services.

In particular, we need to understand the overall commitment of the government to a procurement option not just the initial contract structure (ie. take account of the provider of last resort concept) and the degree of influence the government will maintain once a procurement process has commenced.

Chart 2 provides an alternative view of procurement models (and some specific infrastructure transactions) by looking past the notional contract risk allocation and comparing the degree of government commitment and influence over a transaction. Under this approach we are looking for sustainable infrastructure procurement models where the degree of government influence over a procurement option remains in line with its overall level of commitment (and by inference the private sector's relative commitment and influence).

By viewing these models through the lens of relative commitment and influence, we gain a very different understanding of the respective merits of alternative procurement models:

- Unlike the risk allocation view this highlights significant misalignment of interest between the public and private sector across many of the procurement models. Until we improve this alignment we will continue to see frustratingly slow urban infrastructure development and less than enthusiastic participation from the private sector.
- The misalignment challenge probably has more to do with how these systems are implemented than the models themselves. For example, while the Tollroad PPPs and the Sydney Harbour Tunnel are at opposite ends of the matrix, they have very similar contractual and financing structures – the one fundamental difference is the long-term patronage guarantee on the Sydney Harbour Tunnel.
- The traditional view overstates the risk transfer associated with social infrastructure PPPs. These transactions contain very significant government commitment and, once started, relatively limited capacity for governments to alter or otherwise influence these transactions during the concession period. Provided the proponent remains solvent they have many of the characteristics of a sale and leaseback transaction once they are in the operations phase.
- There is a perception that the franchise outsourcing model can be biased toward government and that the returns for the private sector relative to the commitments involved are marginal.
- There is actually a rich history of quite diverse infrastructure procurement methods in Australia from which we can learn. In finding ways to improve urban infrastructure development it is probably less around finding new models but ensuring we get better public/private alignment of interest on existing techniques.
- The existing range of procurement methods provides government with a fairly flexible suite of infrastructure development options. The trick is to adjust these models to market conditions in order to successfully complete transactions. Good examples of the flexible use of procurement techniques is found in Victorian PPPs since the onset of the GFC, including the decision by government to share refinancing risk on the Victorian Desalination Plant transactions and the adoption of an availability model for the Peninsula Link road project. What we need is more of this type of 'smart dealing' rather than investing in new systems.

Aligning interests for the future

This analysis suggest that unless we focus less on shifting contractual risk between the public and private and more on aligning the interests of the private sector with that of government, the development of urban infrastructure will remain frustratingly slow and high cost. In other words, we will be hearing about the $770 billion (and more) infrastructure spend for many years to come.

In order to get this alignment of interest, government and private sector infrastructure development proponents need to agree on some broad principles. Some of these might include:

Government makes policy: the electorate requires that the government is responsible for policy development and its implementation - including planning. This cannot be devolved to the private sector under any procurement.

Government needs assurance on value for money: government will always need to apply competitive processes to procurement. Obtaining competing proposals from the private sector is the only way it can ensure that it is receiving 'value for money'.

Government is not in the business of constructing or operating infrastructure: the end of public works departments confirms this is the case. However, we still seem to spend an awful lot of time arguing the theoretical merits of using private versus public resources. This also means we do not need concepts such as the Public Sector Comparator (PSC) which may speed up tender processes.

No need to debate the cost of capital: if an infrastructure procurement option contains private sector funding then the appropriate cost of capital is whatever the private sector proponents bid. Let us move on from the 30 year old debate in this country over the risk premium between the government cost of debt and the private sector cost of capital.

What is the minimum commitment period: on PPP transactions, 30 year concessions create significant risk and inflexibility. How can we significantly reduce the commitment periods but still encourage private sector participation?

Reasonable risk taking: in order to have sustainable operations both the private and public sectors want to limit the amount of risk associated with urban infrastructure development. Let us end the high stakes poker seen on many infrastructure transactions in recent years and make the risks more manageable for all parties.

Bust a move: trends and recent movements of Australia's infrastructure debt funding markets

Chris Milcz
Director
Infrastructure & Energy
Finance Group
Wholesale Banking

Following a dearth of transactions during the global financial crisis (GFC), the local infrastructure market has witnessed a strong level of activity in recent years.

As an indication, over the last 18 months or so we have seen twelve public private partnerships (PPPs) in bid or closed – with two of those in New Zealand, two port sales and the hotly contested Sydney Desalination Plant sale process recently tendered by the New South Wales government. The market is also looking forward to more PPP procurement processes, and potentially more government asset sales, in particular that of Port Botany.

A number of parties have played their part, and will continue to do so. On the supply side, various governments have helped considerably in providing a solid pipeline of opportunities. On the demand side, sponsors, contractors, operators and funders – both debt and equity – have also been instrumental in helping facilitate this activity.

In this article we review the trends in infrastructure funding including some interesting recent movements.

Infrastructure financing trends over the past decade

Over the past decade we have seen a very strong growth in private sector funding across all the major infrastructure sectors. Project financing volumes are a good indicator of the total level of infrastructure funding as it is primarily comprised of lending on economic and social infrastructure, energy and utilities, and mining infrastructure.

Chart 1 plots the total level of Australian project financing over the past decade and it shows that activity now stands at more than five times the level it was 10 years ago. This growth can be divided into three broad phases:

1 Emergence of PPPs: up to the mid 2000s rapid growth was driven by the adoption of PPP procurement and some mega PPP projects.

2 GFC slowdown: from 2008 to 2009 volumes fell sharply with the GFC inspired credit crunch.

3 Mining boom: since 2009 the impact of the natural resources boom has became apparent on funding markets with some very large integrated mining/infrastructure and liquefied natural gas (LNG) projects - this trend is continuing in 2012.

As well as the impressive five-fold growth in infrastructure funding in the past decade, an outstanding feature has been the capacity of funding markets to adapt to some pretty extreme changes in market conditions - not least of which is the substantial variability in the cost of credit. As an indicator of this capriciousness over the past decade, Charts 2 and 3 show the variability in low investment grade credit spreads in the United States and Australia – which are reasonable proxies for general borrowing levels for investment grade infrastructure projects.

Reflecting this flexibility we have seen quite a significant variation in the sources of funding, with a high level of project and wrapped bonds replaced by bank loans (primarily) and Export Credit Agency financing in recent years.

Debt funding markets – recent trends

The mainstay of local infrastructure debt funding continues to be domestic and international banks, in particular those that have specialist teams dedicated to structuring these types of transactions.

There are currently about 15 banks active in the Australian infrastructure market, and whilst this is at less than the peak seen before the GFC, there are certainly enough institutions to provide sufficient volume and competition for most infrastructure assets.

"As well as the impressive five-fold growth in infrastructure funding in the past decade, an outstanding feature has been the capacity of funding markets to adapt to some pretty extreme changes in market conditions."

Interestingly, there currently seems to be very strong appetite for greenfield assets, perhaps even exceeding that for brownfield assets. This is probably a function of the more attractive economics and stronger incentives to back sponsor relationships for bids.

Whilst domestic banks remain the anchor for the market, there has also been a noticeable shift in the origin of other active banks, with an increased relative activity of Japanese and North American banks at the expense of European banks – being the traditional powerhouses of project and infrastructure finance.

In the background of volatile wholesale funding markets, the locally active foreign banks tend to have access to relatively lower costs of funds, which has put downward pressure on borrowing costs in recent times. This has been evidenced by some margin compression in a number of mid 2012 refinancing processes.

Other forms of emerging debt financing trends include:

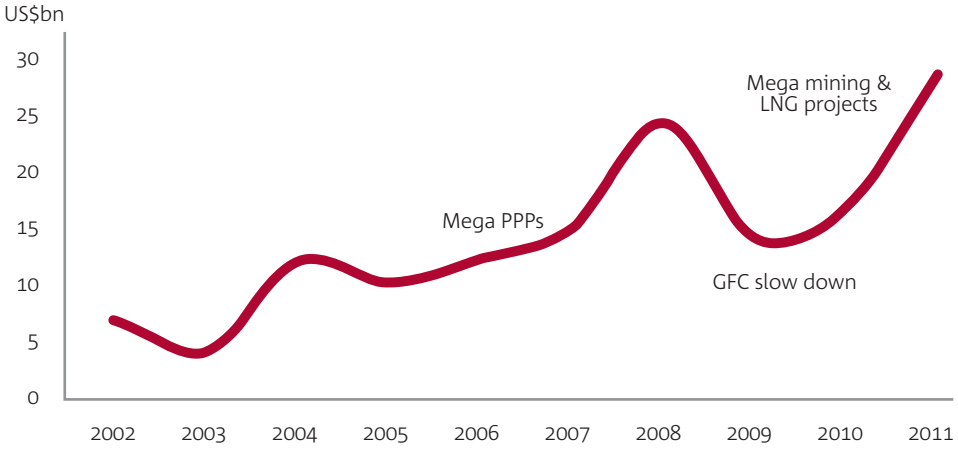
Export Credit Agencies (ECAs)
An ECA is a government body whose purpose is to support its national exports. Of relevance to Australian infrastructure projects, some ECAs are able to provide loans (rather than just insurance policies/ guarantees) in support of foreign equity investors. As a result, there has been greater recent involvement of ECAs in the bidding for local infrastructure projects. Apart from increased debt volumes, ECAs may also provide tenor and pricing benefits.

They have played a significant role of late and are expected to be integral in facilitating completion of the mega-resource projects like Ichthys.

US Private Placements (USPPs)
Another funding market with heightened relevance to Australian infrastructure projects is the USPP market. A number of established infrastructure borrowers, typically gateway airports, have raised debt funding in this market in recent years.

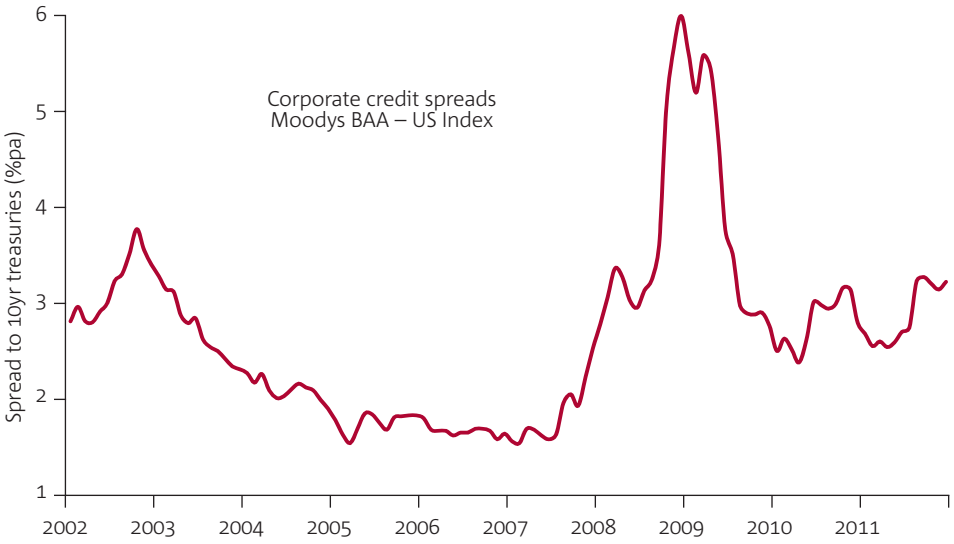
Whilst external credit ratings are not essential, borrowers tend be rated BBB or above to maximise tenor and pricing benefits.

Chart 1: Australian project finance volumes



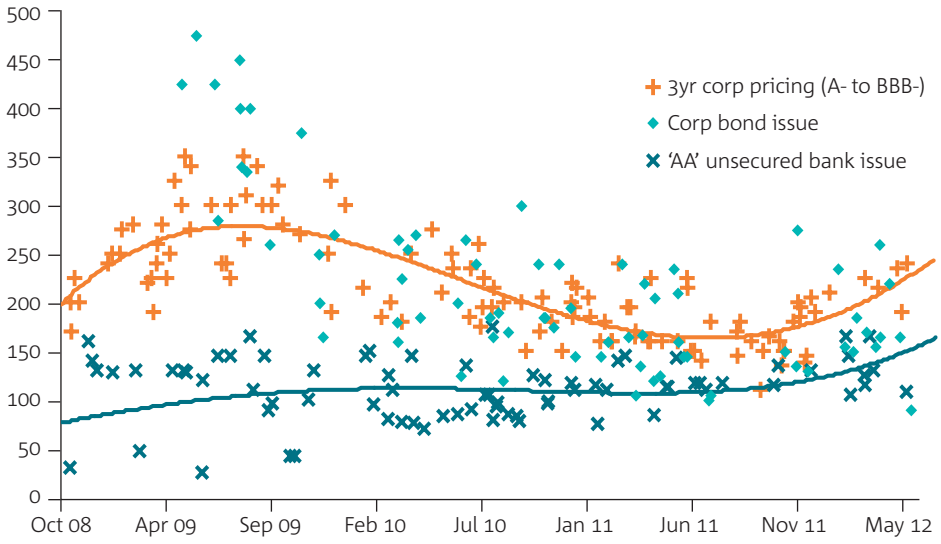
Source: PFI Magazine, 2012.

Chart 2: Credit spreads have been very volatile in the past decade



Source: US Federal Reserve, 2012.

Chart 3: Credit spreads - more recent Australian data[1]



Source: Bloomberg, NAB, June 2012.

1. The above graph compares three year pricing for corporate borrowers with credit profiles in the range of A- to BBB-, against corporate bond issuances and 'AA' unsecured bank issuances since 2008.

Bidding trees

Whilst a common feature in the Australian mergers and acquisitions market and the European infrastructure market, the concept of lenders supporting multiple bidders is a developing phenomenon in the Australian infrastructure market.

The recent Sydney Desalination bid exemplified a situation where the number of equity sponsors interested in bidding exceeded the volume of exclusive debt financing that was available. To help bridge this funding gap, various banks supported multiple bidders, allowing the debt market to provide approximately $4.5 billion of commitments at bid. Subject to continued satisfaction on confidentiality arrangements, this is likely to provide a template for future large infrastructure merger and acquisition bids, including Port Botany.

A financing market that has shown the capacity to adapt

In summary, the current state of the market could be described as healthy, and continuing to evolve. Whilst less reliance is placed on European funding than in times gone by, any significant disruptions in Europe will still impact the Australian market.

The pipeline of transactions is relatively strong, but needs to be continually replenished in order to maintain momentum and interest from offshore investors. We suspect that the capital markets will play an increasing role, particularly for brownfield infrastructure. It will be interesting to see how the emerging trends develop in the medium-term.

The state government conundrum: develop, downgrade or sell?

Stuart Glen
Head of Institutional Banking Queensland

Anugrah Lazarus
Director
Origination – Government Institutional Banking

Australian state governments battle with the balance of servicing the needs of the community and electorate, and setting polices that provide long-term prosperity. The dilemma for our state governments is balancing fiscal prudence against the consequences on long-term economic prosperity of poor infrastructure and an ageing population.

To defer investment in long-dated, productivity enhancing projects would be remiss, however it can be politically risky given the potential for fiscal deficits with a long-term outlook before the return to more conservative fiscal positions.

To maintain our fiscal strength and improve our productivity performance we clearly need to invest in state-based infrastructure. In general, our social infrastructure is facing increasing demands from a growing urban sprawling population, an ageing population, and under investment. Projected infrastructure expenditure over the next decade is anticipated to be over $770 billion with a focus on renewing, upgrading and developing Australia's ageing economic and social infrastructure.

The capital required to invest in these projects is significant, and the economic decisions made regarding how these investments are funded will have long lasting implications on future generations. While state governments consider the merits of privatisation of infrastructure assets to fund development, regulated private industry should continue to attract capital and achieve efficiencies without the need for state-ownership.

The bold moves of the Victorian government in the early 1990s are examples of privatisation to fund infrastructure and improve fiscal and credit quality concerns of the time.

Victoria's big asset sales

In the early 1990s, the Kennett government of Victoria took the bold step of disaggregating the State Electricity Commission into five distribution and retail companies, five generation companies, and a transmission company. It first corporatised and then privatised these assets with the intention of selling them. Proceeds from the sale of these assets totalled approximately $22.9 billion.

On the back of these successful sales the Victorian government disaggregated the Victorian Gas and Fuel Corporation into three distribution and retail companies and a transmission company that yielded sales revenues of approximately $6.3 billion once privatised.

The sale proceeds were used to reduce state net debt and other liabilities "which declined by more than 80% from $32.3 billion as at June 1993 to an estimated $6.1 billion as at 30 June 1999"[1]. "The Auditor General put the savings, net of dividends that might otherwise have been expected, in 1997/98 at $760 million"[2].

As a consequence of the rapid reduction in debt growth on the back of the commitment to privatise state assets, the return to a fiscal surplus and the improvement in the state's budgetary position, Moody's upgraded the Victorian state debt rating from 'A1' in 1992 to 'Aaa' by 2000 (Table 1).

As a result of privatisation of state assets and subsequent improved financial metrics – including the gross interest burden, which improved from 22.8% of total revenue in 1993 to 13.5% in 1997 (Chart 1) – the state was sustainably transformed economically and financially (Chart 2).

Table 1: Victoria's credit ratings history (Moody's)

Date	Rating
February 2000	Aaa
December 1996	Aa1
May 1995	Aa2
March 1994	Aa3
October 1992	A1
May 1991	Aa2
July 1990	Aa1

Source: Moody's ratings history, 2000.

1. Moody's Investors Service Global Credit Research – Australian states, April 1997.
2. IPA Institute of Public Affairs Ltd – Dr Alan Moran, *The financial costs and benefits of privatisation – Energy Paper No 25*, July 2002.

New South Wales and Queensland options

Fast-forward to the present, and it is interesting to compare the current ratings of New South Wales and Queensland with that of Victoria in 1993. In 1993, Moody's rated Victoria 'A1' however currently Moody's has credit ratings on New South Wales and Queensland of 'Aaa' and 'Aa1' respectively.

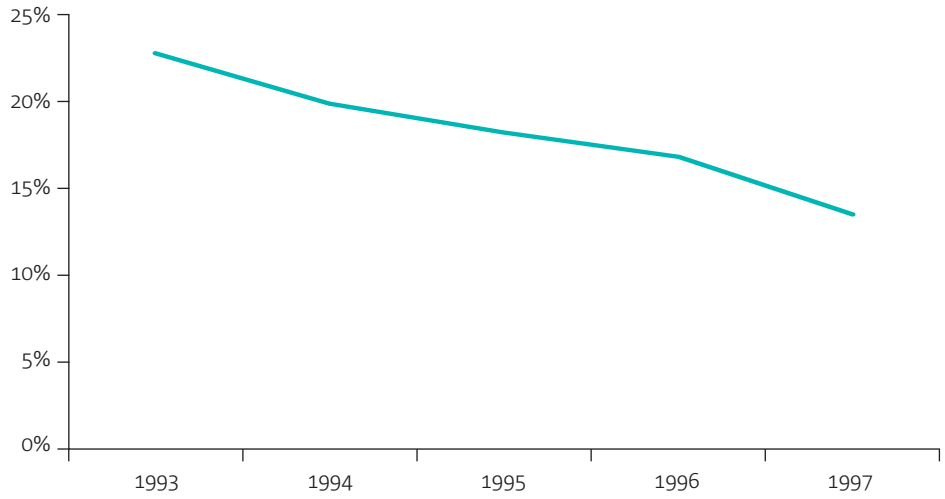
If the Kennett government's rationale to privatise Victorian gas and electricity assets was intended to restore the state's credit rating to 'Aaa', this was achieved in 2000. Is there then an opportunity for Queensland and New South Wales to improve their credit ratings or balance sheet capacity to fund growth, through the sale of state assets such as electricity generators and distribution companies? We believe that a case can be made in favour of such a course of action.

Charts 3 and 4 highlight the comparison of key financial metrics between Victoria (during privatisation in the early 90s) and New South Wales and Queensland (today).

Queensland debt and infrastructure needs

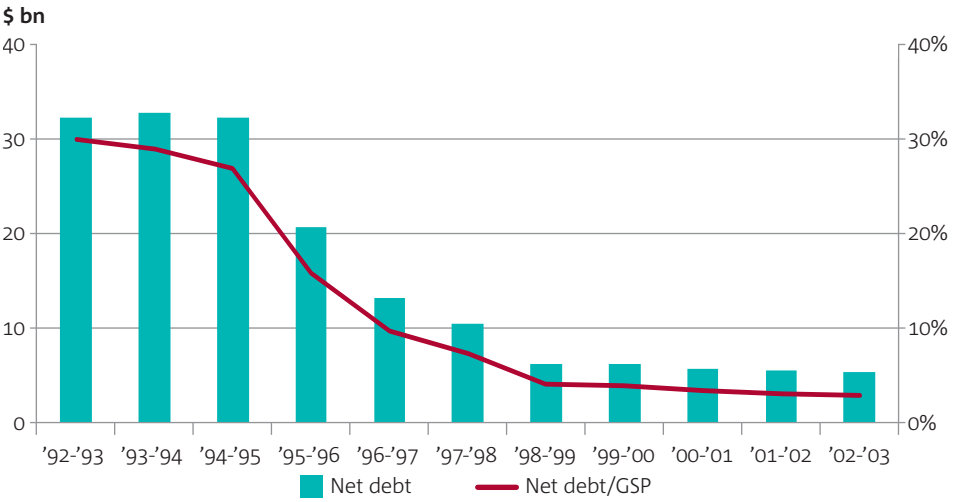
In early 2009 Queensland lost its 'Aaa' credit rating - it is currently rated 'Aa1' by Moody's. Prior to its victory in the March 2012 Queensland state election the Liberal National Party committed that there would be no privatisation of public assets unless a mandate had been sought at an election, which rules out such a move in the current term of parliament.

Chart 1: Victoria – gross interest payments/total revenue



Source: Moody's Investor Services, 1997.

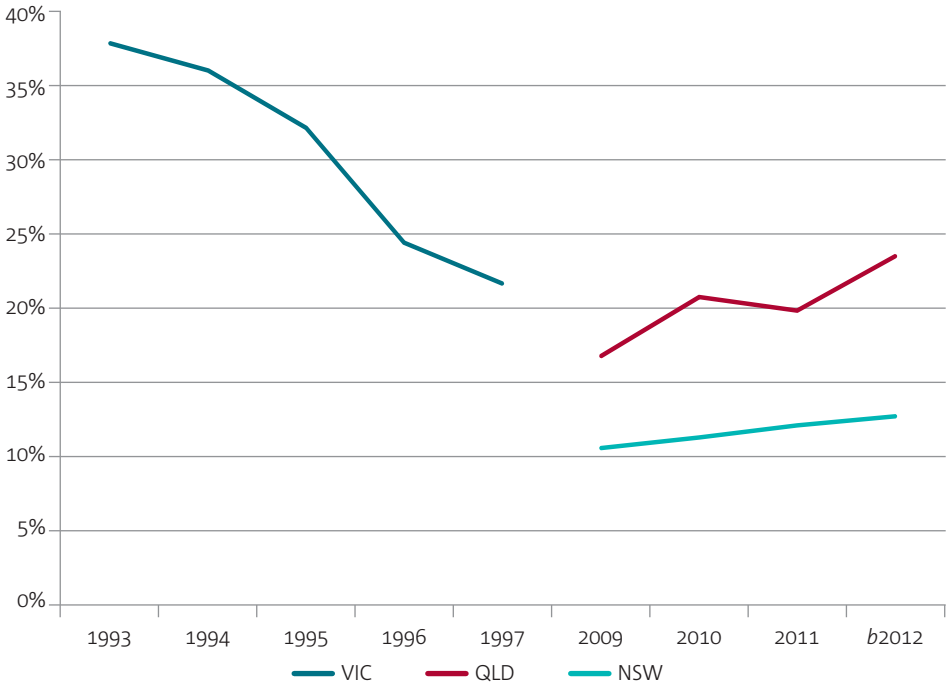
Chart 2: Victorian state government – net debt and net debt/gross state product (GSP)



Source: Victoria State Government, Department of Treasury and Finance, 2012.

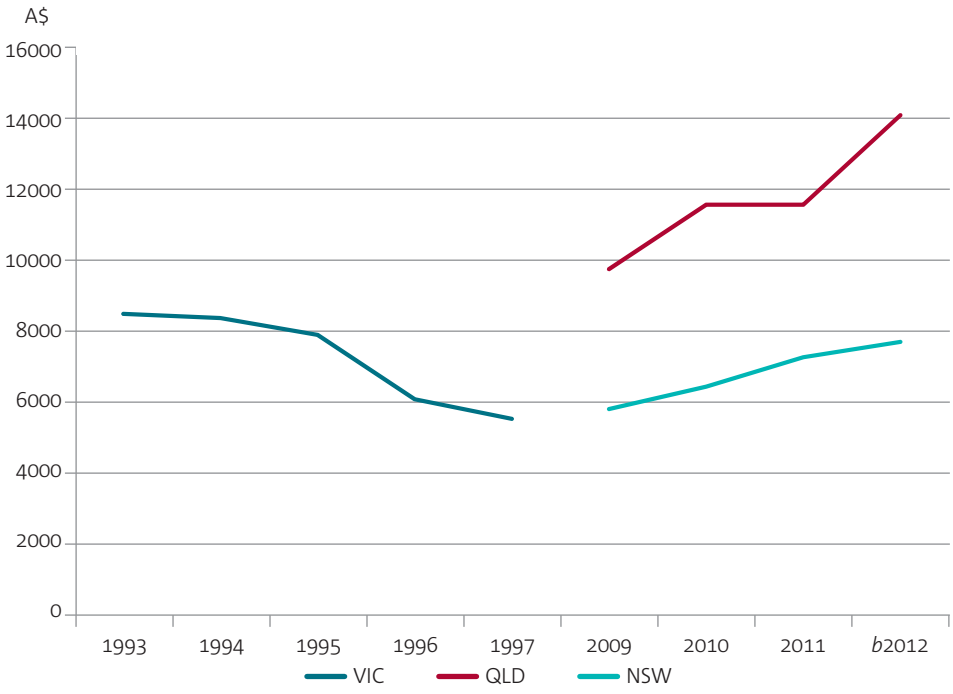
"Is there then an opportunity for Queensland and New South Wales to improve their credit ratings or balance sheet capacity to fund growth, through the sale of state assets such as electricity generators and distribution companies? We believe that a case can be made in favour of such a course of action."

Chart 3: Three state comparison – gross debt/GSP (%)



Source: Moody's Investor services, NAB, 1997-2012.

Chart 4: Three state comparison – gross debt per capita



Source: Moody's Investor services, NAB, 1997-2012.

What will it take to obtain an upgrade to the state's existing rating (from 'Aa1' to 'Aaa')? According to Moody's, a 'Aaa' rating can be achieved with a "solid medium-term strategy to bring the state's budget back into balance and achieve a significant decline in debt levels"[3]. Hence the road to recovering the coveted 'Aaa' rating needs at least two legs – a commitment to cutting the cost of government and a simultaneous easing of the financial burden of the state.

With an estimated 2012 Queensland state non-financial public sector debt of $65.8 billion and a commitment by the Newman government to restore the state's 'Aaa' credit rating, the reduction of Queensland's debt will be high on the Newman government's agenda.

As such, the Queensland government announced the appointment of former Federal Treasurer Peter Costello to head the Commission of Audit into the state of Queensland's finances and review its debt position. His first draft report was handed down on 15 June of this year, with a second report due in November and a final report to be delivered in February 2013. The June interim report identified adjustments to revenue, CAPEX, and the improvement in the key debt to revenue ratio, as instrumental in regaining the much desired 'Aaa' rating.

Whilst not pre-empting ultimate findings, this audit will need to address the state's existing level of debt and how to fund new infrastructure, as well as how to return the state to an 'Aaa' credit rating. Interest cost savings to the tune of $100 million per annum would be available as a result of such a ratings upgrade.

These issues are the same as those faced by the Kennett government in the early 1990s. If history is to repeat itself, then it is plausible that the Newman government will seek a mandate from the electorate to privatise its electricity assets at the next state election.

3. Moody's Investors Service: Queensland (state of) Australia, 10 February 2012.

The forecast infrastructure spend for New South Wales

In the 2011-12 New South Wales state government budget, Treasurer Mike Baird committed $62.6 billion towards infrastructure investment in the state of New South Wales over the four years to 2014-2015[4]. Whilst the New South Wales government's existing credit rating is 'Aaa' (Moody's), there is a chance the rating could be downgraded if "a weakening in government resolve to implement budgetary measures to reduce the size of recurring deficits and the pace of growth in debt could result in a negative movement in the rating"[5].

If the state government wishes to maintain its existing credit rating and continue its commitment to build the proposed infrastructure, it will need to be funded out of existing revenues (which is unlikely given the lack of financial flexibility in the current budget and the state's financial position, see Charts 3 and 4) or through asset sales which the O'Farrell government will undoubtedly need to seek a mandate for at the next state election.

One source of revenue for New South Wales is similarly via the sale of its electricity assets. An argument put forward in the recent New South Wales Tamberlin Special Commission of Inquiry into the Electricity Transactions found that "full privatisation of the networks would enable government to significantly reduce its net financing liabilities, creating additional capacity for infrastructure projects"[6].

"In its submission to the Inquiry, Infrastructure Partnerships Australia, the nation's peak infrastructure body, valued New South Wales' transmission and distribution networks as worth between $29.2 and $34.5 billion"[7].

Over the New South Wales government's first term in office it will be weighing up the public benefit of an 'Aaa' credit rating and the requirement for new infrastructure investment (and also for the renewal of ageing infrastructure and the backlog of local government infrastructure in the state), against the policy benefits of the public ownership of its electricity assets. As with Queensland it may well seek a mandate from the electorate to fully or partially privatise its electricity assets[8].

The chosen path

The Victorian electricity and gas privatisation process provides genuine insights into the benefits of reducing state debt rapidly, and achieving credit ratings upgrades and balance sheet capacity for much needed funding for important infrastructure spend.

It appears, with the very recent announcement by the New South Wales Premier to sell the state's generators, that New South Wales has started on the journey successfully undertaken by Victoria. How far the New South Wales government proceeds down this path is yet to be seen.

In Queensland, while the interim report has provided a useful guide and path forward, we still await the ultimate findings of the Commission of Audit to see how they will address their commitment to regain an 'Aaa' credit rating and provide for the funding and investment needed for the state's growth in the decade to come.

4. Source: New South Wales Budget Paper 4, 2011-2012. Which department produces this document?
5. Moody's Investors Service: New South Wales (state of), Australia, 29 February 2012.
6. Special Commission of Inquiry into the Electricity Transactions, The Honourable Brian John Tamberlin QC, October 2011.
7. Special Commission of Inquiry into the Electricity Transactions, The Honourable Brian John Tamberlin QC, October 2011.
8. At the time of writing this article the New South Wales state government announced the sale of generation assets. The Premier Mr O'Farrell said: "The sale is expected to generate gross proceeds of around $3 billion, which will go toward critical road, school and hospital projects across New South Wales, with at least a third directed towards regional areas." Source?

NAB Contacts

John Martin
Managing Director
Head of NAB Advisory
+61 (0)2 9237 1091
john.martin@nab.com.au

Ryan Chua
Director
Infrastructure & Natural Resources Advisory
NAB Advisory
+886 983 515 985
ryan.chua@nab.com.au

Michael Clarke
Director
Capital Insights & Client Solutions
NAB Advisory
+61 (0)467 774 978
michael.d.clarke@nab.com.au

Richard Cooper
Director
Head of Infrastructure & Energy Finance Group
+61 (0)2 9237 9042
richard.h.cooper@nab.com.au

Stuart Glen
Head of Institutional Banking Qld
+61 (0)437 871 774
stuart.glen@nab.com.au

Dinush Kurera
Associate
Environmental Finance Solutions
NAB Advisory
+61 (0)3 8641 2884
dinush.kurera@nab.com.au

Anugrah Lazarus
Director
Government Origination
Institutional Banking
+61 (0)2 9237 9137
anugrah.lazarus@nab.com.au

James MacGinley
Associate Director
Resources
Institutional Banking Qld
+61 (0)7 3234 5032
james.macginley@nab.com.au

Fiona McIntyre
Director
Head of Energy & Utilities
Institutional Banking
+61 (0)3 8641 2923
fiona.mcintyre@nab.com.au

Chris Milcz
Director
Infrastructure & Energy Finance Group
Wholesale Banking
+61 (0)2 8220 5403
chris.milcz@nab.com.au

Omer Molad
Director
Resources
Institutional Banking VIC
+61 (0)3 8641 5766
omer.molad@nab.com.au

Rachel O'Neill
Director
Energy & Utilities
Institutional Banking Qld
+61 (0)7 3234 6649
rachel.m.o'neill@nab.com.au

Dave Roberts
Head of Infrastructure &
Natural Resources Advisory
NAB Advisory
+61 (0)2 8220 5400
dave.roberts@nab.com.au

Matthew Sandham
Director
Resources, Energy & Utilities
Institutional Banking NSW
+61 (0)2 9237 0419
matthew.sandham@nab.com.au

Nick Scott
Associate Director
Financial Institutions Solutions & Advisory
NAB Advisory
+61 (0)3 8641 2900
nick.j.scott@nab.com.au

Peter Stephens
Managing Director
Capital & Ratings Advisory
NAB Advisory
+61 (0)3 8641 3188
peter.stephens@nab.com.au

Robert White
Associate Director
Environmental Finance Solutions
NAB Advisory
+61 (0)3 8641 5369
robert.j.white@nab.com.au