



GROUNDWORK FOR GROWTH

BUILDING THE
INFRASTRUCTURE
THAT AUSTRALIA
NEEDS

BUSINESS COUNCIL OF AUSTRALIA

An aerial photograph of a city, similar to the one at the top, but with several bright yellow lines overlaid across it, suggesting infrastructure or data flow.

HOW WE CAN ACHIEVE
A LONG-TERM GROWTH
AMBITION

ABOUT THIS REPORT



This report, *Groundwork for Growth: Building the Infrastructure that Australia Needs*, describes the steps necessary to bring about the next wave of infrastructure reform to enable and strengthen sustainable economic growth in Australia.

It comprises recommendations by the Business Council of Australia (BCA), together with a report prepared for the BCA by Rod Sims of Port Jackson Partners Limited (PJPL), titled 'Seizing the Opportunity to Reform and Restore Australia's Economic Infrastructure'. The PJPL report sets out recent developments in Australia's infrastructure, analyses the sector's governance structures, outlines the key concerns across Australia's major infrastructure types, and proposes responses and future directions.

Groundwork for Growth proposes a path forward that takes a long-term view of Australia's growth and identifies the infrastructure reforms required to address the economic, social and environmental factors that will improve the health, amenity, convenience and efficiency of our communities while promoting greater productivity and higher living standards.

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SEIZING THE OPPORTUNITY TO REFORM AND RESTORE AUSTRALIA'S ECONOMIC INFRASTRUCTURE

REPORT TO THE BCA BY ROD SIMS OF PORT JACKSON PARTNERS LIMITED

OUR ASPIRATIONS: STRONG NATIONAL PRODUCTIVITY AND ECONOMIC GROWTH

THE BUSINESS COUNCIL OF AUSTRALIA'S ASPIRATION IS FOR AUSTRALIA TO BE THE BEST PLACE IN THE WORLD IN WHICH TO LIVE, LEARN, WORK AND DO BUSINESS.

Australia's physical area and the size and geographical dispersion of its population, in combination with its distance from international markets, are unique. These features mean infrastructure reforms can have a significant positive effect on Australia's economic growth, productivity and living standards, as well as the efficiency and amenity of its urban environments.

The importance of infrastructure can be seen across the economy, including the transport of exports to international markets, the increased reliance on telecommunications to reach new markets and provide new products, and the range of infrastructure needed to ensure the vibrancy and quality of life in our growing cities and regional centres.

The BCA is recommending pressing ahead with the next wave of microeconomic reform – especially infrastructure reform – to ensure Australia is globally competitive. The state of our freight, transport, water, electricity and communications infrastructure will either inhibit or stimulate Australia's productivity and living standards.

As Prime Minister Kevin Rudd has identified, we need 'world-class infrastructure to move Australia to a more diverse, competitive and sustainable economy that creates social, economic and environmental benefits in the long term'.

Infrastructure reform will make a substantial difference to the way we do business, by enabling product innovation, expansion of markets, more efficient logistics and new ways of producing products and services by Australian firms.

ECONOMIC INFRASTRUCTURE: REQUIREMENTS FOR A NEW WAVE OF REFORM

There has been a heightened engagement in infrastructure policy recently as governments have recognised the significant productivity gains available from effective infrastructure decisions. There has also been increased expenditure on infrastructure by all levels of government in Australia over the past five years.

The report by Rod Sims of Port Jackson Partners Limited, titled 'Seizing the Opportunity to Reform and Restore Australia's Economic Infrastructure', provides details of these efforts and how they have gone some way to alleviate Australia's infrastructure bottlenecks.

These efforts have contributed to an infrastructure catch-up, but are not enough to guarantee ongoing productivity improvements and to facilitate future economic growth. What is required is a new infrastructure reform agenda with resources directed to where there is greatest impact to drive improvements in Australia's productivity and facilitate and sustain economic growth.

INFRASTRUCTURE PROGRESS SINCE 2005

The following are examples of progress made in the institutional, governance, policy and regulatory settings and planning processes relating to infrastructure in Australia since 2005. They are discussed further in 'Seizing the Opportunity to Reform and Restore Australia's Economic Infrastructure'.

- Inconsistent state and territory regulations surrounding the operation of road and rail freight systems are now recognised as major impediments to well-functioning infrastructure.
- Improved planning and supply of urban water is under way.
- The Murray–Darling Basin Authority has now been established and water basin planning is under way.
- Institutional reforms to improve the governance and regulation of the electricity market, including the establishment of the Australian Energy Regulator and the Australian Energy Market Commission, are under way.
- Investment in economic infrastructure has been steadily increasing as a percentage of GDP from a low point of 3.6 per cent of GDP in 2000–01 to 5.1 per cent in 2007–08 – a growth rate of 8.3 per cent in real terms over the period. This includes 14 per cent of the federal government's recent economic stimulus investment which has been in economic infrastructure.
- The federal government has expanded its role in infrastructure planning and investment.
- Infrastructure Australia has been established to provide infrastructure advice to the federal government.
- A commitment has been made to improve access to, and the speed of, broadband.

The recognition by the federal and state governments that infrastructure is an economic priority provides the basis for a new wave of infrastructure reform designed to:

- Make better use of the existing stock of infrastructure and improve infrastructure investment incentives.
- Improve infrastructure and project planning so that we are undertaking the right investment to achieve clearly defined objectives.
- Ensure there is transparent and measured progress towards improved infrastructure outcomes.

Essential to the success of this new wave of infrastructure reform are a clear understanding of Australia's growth ambition and regular reviews of Australia's infrastructure.

A long-term view needs to be taken of Australia's desired levels of growth. This will provide the federal and state governments with the context and opportunity to consider the infrastructure required to improve the health, amenity, convenience and efficiency of our communities, while promoting greater productivity and higher living standards.

Regular reviews of Australia's infrastructure will inform both the federal and state governments as to the condition and capacity of current infrastructure, and will enable them to make better judgments of how it needs to be strengthened to underpin Australia's growth ambition, prevent bottlenecks and meet business and community needs.

A partnership between the federal and state governments to agree on a long-term growth ambition, and the completion of regular reviews of infrastructure by the Productivity Commission, are essential enablers of the next wave of infrastructure reform, but of themselves these initiatives will not be sufficient. Reforms are also required in four key areas:

- Given the national nature and importance of Australia's infrastructure markets, the federal and state governments, in partnership through the Council of Australian Governments (COAG), should take the lead in progressing infrastructure reform. Infrastructure Australia is well placed to provide supporting advice to the federal government as part of this process.
- Policy and regulatory frameworks should encourage efficient national infrastructure markets, improve infrastructure use and provide signals for investment. This will require national approaches to regulation, transparent regulation goals, and application of the COAG and Office of Best Practice Regulation (OBPR) regulation principles and guidance material.
- Planning for infrastructure provision should incorporate longer time horizons and be integrated across infrastructure classes as well as take into account broader economic, environmental and sustainability issues. Publicly funded infrastructure projects should be transparently assessed so that the objectives for each project can be clearly identified, justified, implemented and measured.
- The federal and state governments will need to know the progress of their infrastructure reform agendas to ensure they are meeting the targets set, demonstrably improving national productivity, and achieving these improvements through the allocation of resources to where they will have the maximum impact. This will require regular reviews by the Productivity Commission of the capacity of Australia's infrastructure to support growth, an agreed set of service standards, and transparent project evaluations. Measurement of progress will provide greater transparency, improved accountability and knowledge as to what does and does not work and whether policies and regulations need to be adjusted.



The key reforms to agree and achieve Australia's growth ambition are summarised in Exhibit 1.

EXHIBIT 1
GROUNDWORK FOR GROWTH: REQUIREMENTS FOR THE ACHIEVEMENT
OF AUSTRALIA'S GROWTH AMBITION



<p>A GROWTH AMBITION FOR AUSTRALIA THAT IS AGREED TO BY THE FEDERAL AND STATE GOVERNMENTS</p>	<p>Aim to be in the top five OECD countries on a measure of GDP per capita – strive for improved economic growth and standards of living</p> <p>Lift the productivity rate to underpin economic growth</p> <p>Ensure Australia’s cities and regions have the infrastructure to stay ahead of population and economic growth</p> <p>Identify the infrastructure required to address the economic, social and environmental factors that will improve the health, amenity, convenience and efficiency of our communities while promoting greater productivity and higher living standards.</p>
<p>Institutional and governance requirements</p>	<p>The federal and state governments through COAG to take the lead in infrastructure reform</p> <p>Infrastructure Australia to advise the federal government on specific market or regulatory failures, assist in setting service standards for public infrastructure investment, and maintain a pipeline of transparently assessed, publicly funded projects.</p>
<p>Policy and regulatory requirements</p>	<p>Regulatory frameworks and improved pricing to encourage national markets, efficient infrastructure use and the provision of signals for investment</p> <p>National approach to regulations</p> <p>Transparent regulatory goals</p> <p>Application of COAG and OBPR best practice principles</p>
<p>Planning requirements</p>	<p>Longer-term planning horizons, linked to growth ambition</p> <p>Integrated planning across infrastructure classes taking into account broader economic, environmental and sustainability issues</p> <p>Cost-benefit analysis of infrastructure investments to ensure resources are directed to where they have maximum impact on productivity</p> <p>Transparent assessment of publicly funded projects</p>
<p>Requirements for the measurement of progress</p>	<p>Regular reviews of national infrastructure capacity by the Productivity Commission</p> <p>A nationally agreed framework of target service levels</p> <p>National measurement of progress and review of policies</p>

ECONOMIC INFRASTRUCTURE: REQUIREMENTS FOR SECTORAL REFORMS

Within this broader infrastructure reform agenda, it is equally as important that there continue to be reforms in the freight, transport, water, electricity and communications sectors to ensure the provision of essential infrastructure to business and the community.

'Seizing the Opportunity to Reform and Restore Australia's Economic Infrastructure' provides detailed analysis of the progress in each of these infrastructure sectors and identifies clear pathways forward.

Exhibit 2 summarises the critical next steps.

EXHIBIT 2 GROUNDWORK FOR GROWTH: REQUIREMENTS FOR SECTORAL REFORMS

SECTOR	RECOMMENDATION
Freight	<ul style="list-style-type: none"> — COAG to develop a national freight implementation plan — Accelerate pricing and regulatory reforms, link road expenditure to revenue, and develop a freight project pipeline
Urban transport	<ul style="list-style-type: none"> — Federal government to formalise its role and work with the states on urban transport plans — Improve urban transport planning and project assessment and investment to accommodate growth, reduce congestion and improve efficiency in public transport
Urban water	<ul style="list-style-type: none"> — Cost-benefit analysis and consideration of all available options for water supply — COAG to commit to well-functioning water markets — COAG should ask the Productivity Commission to recommend reforms to urban water markets
Rural water	<ul style="list-style-type: none"> — Provide greater transparency and detail on water buyback and infrastructure objectives — Bring forward policy reforms, reorder funding priorities and consider new institutions to improve the efficiency of the market
Electricity	<ul style="list-style-type: none"> — Complete the remaining reform agenda, including the rollout of smart meters, location pricing and addressing retail price caps — Carefully manage the impact of the Carbon Pollution Reduction Scheme and the Renewable Energy Target on future electricity supply — Energy white paper to consider the impact of higher electricity prices on the economy
Communications	<ul style="list-style-type: none"> — Use the implementation study to assess the net benefits of the National Broadband Network policy and to set the market and regulatory frameworks that will support long-term productivity benefits in a cost-effective manner.

SEIZING THE NATIONAL ECONOMIC REFORM OPPORTUNITY

Infrastructure quality and capacity will play a critical role in determining the level and sustainability of economic growth and future living standards.

Australia has benefited substantially from previous microeconomic reforms, including those that targeted infrastructure. Australia's governments should now commit to a substantial and ongoing infrastructure reform agenda that ensures Australia can respond to the challenges that come with projected population growth and predicted economic infrastructure demands. This will include the anticipated 50 per cent increase in freight movements by 2020, the estimated doubling in congestion costs by 2020, and a 50 per cent increase in energy demand by 2030.

With heightened and more effective engagement of all levels of government in infrastructure policy, we will be well placed to introduce the next wave of microeconomic reforms needed to increase productivity and to ensure that Australia is globally competitive and achieves its growth ambition over the coming decades.

AUSTRALIA'S GOVERNMENTS SHOULD NOW COMMIT TO A SUBSTANTIAL AND ONGOING INFRASTRUCTURE REFORM AGENDA



Seizing the opportunity to reform and restore Australia's economic infrastructure

Report prepared for the **Business Council of Australia**
by Rod Sims, Director, Port Jackson Partners Limited

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Sample recent past reports/papers on infrastructure by Rod Sims

- *Releasing the infrastructure handbrake* – Address to the Melbourne Institute and the Australian newspaper's Economic and Social Outlook Conference, March 2008
- *Six key infrastructure reform questions* – Address to the New Directions in Economic Policy Conference, Economic Society of Australia, February 2008
- *Revitalising Infrastructure Reform* – September 2007, for the BCA
- *Water under Pressure* – September 2006, for the BCA
- *Reforming and Restoring Australia's Infrastructure* – March 2005, for the BCA
- *Practical steps to address the key problems facing the National Electricity Market: Five markets, not one* – Address to ACCC Annual Regulatory Conference, August 2003.

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Port Jackson Partners Limited

Port Jackson Partners Limited (PJPL) advises Australia's leading companies on issues of commercial strategy and organisation. It works with companies in all sectors on issues of fundamental importance to their future success.

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This report is based on reports and data available up until 29 September 2009.

OVERVIEW

- Australia’s economic prosperity depends on well-performing infrastructure, perhaps more so than in other countries given our distances, climate and urbanisation. The state of our transport, water supply, electricity and communications sectors can either inhibit or stimulate our economy.
- The infrastructure market and related competition policy reforms of the late 1980s-1990s were one of a handful of defining economic reforms that have underpinned Australia’s strong economic performance of the last 15 years. The reforms came, however, off a low base. Australia’s infrastructure markets, for example, were then less integrated than Europe’s, as Bob Hawke famously observed in the late 1980s.
- The extent of and momentum from those earlier reforms appeared to blind observers for many years as to what else remained to be done; the glass could easily be described as “half full”. The reality, however, is that there is much more to do, with many reforms only half done, and with continuing population and economic growth.
- Indeed, the evidence of problems is clear. Today we can observe bottlenecks at our ports and intermodal hubs, many inadequate rail and road systems, rising congestion on our urban roads, inadequate public transport, the threat of urban water shortages and the reality of over-allocated rural water systems and, now with the policy response to climate change, concerns over our electricity cost competitiveness and even reliability. This is the “glass half empty” view.
- The good news is that these problems are now well recognised, and economic infrastructure is now back centre stage in the economic policy debate. Equally as welcome, the solution directions seem largely agreed, and the Commonwealth is now engaged in all sectors, including urban transport and urban water.
- The clarity with which our infrastructure problems and solutions are now seen, however, has the unfortunate effect for those in government of raising expectations in terms of execution. The onus is now on the Commonwealth Government in particular, but also on the Council of Australian Governments (COAG) to drive the required reforms. Even the Commonwealth Treasurer has noted “just how acute our (infrastructure) capacity constraints are, and the magnitude of the challenges to fix them ...”
- In all sectors the future efforts of all governments must focus on three infrastructure imperatives: Policy, Planning and measuring Progress. First, we need to see **Policy** reform so that we make better use of our existing stock of infrastructure and provide the appropriate signals for future investment. Second, we need greatly improved sector and project **Planning** so that we are undertaking the right investment to achieve clearly defined objectives. Third, we need to measure **Progress** transparently towards clearly specified target service levels.
- This report examines recent trends in our infrastructure spend, and then looks at institutional arrangements and the formation and role of Infrastructure Australia in particular. It then focuses on the freight transport, urban transport, urban water, rural water, electricity and broadband communications sectors.

- Australia has recently seen a significant increase in our spend on economic infrastructure, mainly coming from the States and the private sector. Fourteen percent of the Commonwealth's recent stimulus spending went on economic infrastructure, given that few projects were "shovel ready". Significantly, the Commonwealth used much of this money on urban metro rail and ports which represents a major change in Australia's infrastructure responsibilities. The key point, however, is that the recent public sector infrastructure spend has largely been a catch up on a past underspend, rather than positioning us for future growth.
- While COAG will continue to be accountable for our infrastructure progress and performance a key event has been the recent formation of Infrastructure Australia. It has already made a major contribution. It is important, however, that it now better defines its future role and approach.
- Australia's **freight transport** sector has long laboured under poor planning, inconsistent state transport regulations, inappropriate user charges and under investment. Not only has Infrastructure Australia highlighted these problems, but a number of government reports and indications from the Henry Tax Review have described the policy and other changes required to correct the situation. It is now time for COAG to institute a National Freight Implementation Plan, which can clarify and accelerate the appropriate pricing and regulatory reforms, including investigating the appropriate way to link road expenditure and revenue, and develop a freight project pipeline that can meet clear measurable objectives.
- Our **urban transport** sector faces increasing road and public transport congestion, which must seem unstoppable in most cities. Fortunately there has been a recent increase in urban transport expenditure and the Commonwealth has now embraced a role for itself in urban transport infrastructure planning and spending. The Commonwealth now needs to formalise this involvement and work with each state on well-crafted urban transport plans. These plans should improve urban transport project assessment and investment, and integrate this with reforms to urban transport pricing and public transport efficiency to make much better use of the urban transport infrastructure we already have, and accommodate the urban growth we expect.
- Our past reports highlighted that the shortages of **urban water** were essentially the result of a lack of investment over 20 years. This stance has been verified by a recent surge in investment to increase the supply of urban water so that it can now likely meet the immediate forecast demand, even taking into account the uncertainties associated with climate change. There are, however, concerns about whether the lowest cost supply sources were chosen given that options such as rural to urban water trading were often ruled out. Looking forward, COAG should now move Australia towards appropriately functioning water markets where consumers decide how much they wish to consume at prices that will bring forward the appropriate increments of new supply.
- With **rural water** we continue to see over-allocation and the inefficient use of the available supplies. While these issues have been a policy priority since 1994 we have only recently put in place some of the key building blocks of a solution. There remains, however, some confusion surrounding implementation, and the overall timetable for implementation seems slow given environmental pressures, the uncertainty faced by those reliant on rural water and the length of time already taken on these reforms. The

Commonwealth should clarify aspects of its policy framework, bring forward its completion timetable, reorder its funding priorities and review the need for some new institutions to ensure we cement in place the required changes.

- Our **electricity** sector saw considerable reform in the 1990s and in many senses has been performing well. It now faces, however, possibly the largest challenges of any sector. Due to the introduction of the Carbon Pollution Reduction Scheme (CPRS), and the expanded Renewable Energy Target (RET), there will be a revolution in the way our electricity is supplied which, if not handled carefully, could put reliability at risk. In addition, there are many forces increasing Australia's future relative energy costs, with significant implications for Australia's competitiveness. This requires a major policy response in the coming Commonwealth Energy White Paper. Sitting alongside these major concerns are the longstanding energy policy reform issues that are now, if anything, more important to address in areas such as location pricing, smart meters and intelligent networks and addressing the remaining state retail price caps.
- The Commonwealth's recent **National Broadband Network (NBN)** announcement involved an investment decision of up to \$43 billion with little supporting analysis. There are also important issues in terms of the Commonwealth's role as both the developer and regulator of the NBN, and the uncertainty over what technologies will be allowed to compete with the NBN. If handled appropriately, however, the Government's \$53 million Implementation Study can address these concerns and ensure that the NBN proceeds in a way that can enhance the contribution of this vital sector to Australia's future productivity performance.

* * * *

The above suggests a massive future infrastructure agenda of great importance and significant complexity. Decisions by the Commonwealth and COAG over the next few years can determine the future performance of Australia's infrastructure, and therefore the positive contribution or otherwise that this vital sector makes to our future prosperity.

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EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

Our past reports written for the Business Council of Australia (BCA) have highlighted problems with Australia's infrastructure and the drivers of these problems.¹ Indeed, our 2007 report stated that:

“At one level Australia's infrastructure problems can be seen in bottlenecks at our bulk and container ports and at our intermodal hubs, inadequate rail systems, congestion on our urban roads, struggling public transport, water shortages in our cities, over-allocated rural water systems and (an increasingly acknowledged) straining electricity network. At a deeper level, however, we see the drivers of these problems in a lack of effective national infrastructure markets, inappropriate infrastructure pricing, often poorly coordinated planning, a confusion between government roles (as policy maker, regulator and service provider), and sometimes misguided regulation.²”

These problems have received relatively little attention over recent years, except that significant steps were taken in relation to both urban and rural water which were prompted by the crisis of the recent severe drought. This lack of attention is strange for two reasons.

First, any country's economic prosperity depends on well-performing infrastructure. For Australia this is all the more so given our distances, climate and urbanisation. Well-performing infrastructure can stimulate economic growth and bring a sense of prosperity to the community; poorly performing infrastructure can do the reverse.

Second, the infrastructure market reforms that started in the late 1980s, and then became the wider competition policy reforms of the early 1990s, boosted Australia's productivity growth significantly and were a key underpinning of Australia's strong economic performance of the last 15 years.

The extent of and momentum from these reforms, however, led to a “glass half full” mindset in that most observers focussed on the many notable achievements in terms of a better functioning electricity market, water trading and early moves towards a national freight market.

With a “glass half empty” mindset, however, it was possible to observe growing problems, as described above, which will only worsen as Australia heads towards a population of 35 million by the middle of the century. The optimism that flowed from those early reforms has now gradually given way to mounting concerns that Australia's infrastructure will be a significant restraint on growth unless steps are now taken. The Commonwealth Treasurer has also noted “just how acute our (infrastructure) capacity constraints are, and the magnitude of the challenge to fix them”³.

¹ See the list of some of the past reports on infrastructure written by this author on the inside cover page

² *Revitalising Infrastructure Reform*, in Infrastructure Roadmap for Reform, Business Council of Australia, September 2007

³ *Nation Building and the Future Economy*, Wayne Swan, speech to Infrastructure Association of Queensland lunch, 9 September 2008.

It is pleasing, therefore, that infrastructure has returned to centre stage in the economic debate. There is now a widespread understanding of the problems and challenges we face, many recent reports have established a consensus as to how we should address these problems, and there have been some initial steps taken to implement the required solutions.

With these building blocks in place, of course, comes the heightened expectation on all governments, but the Commonwealth in particular, that the appropriate steps will now be taken. Along with these expectations comes a sense of urgency which flows in part from the nature of the problems, but more from the fact that the current focus on infrastructure may not last. We need to implement the steps that can address the problems now and lay solid foundations for the future.

At the highest level the challenges in all sectors are reasonably similar. First, we need to see **policy** (mainly pricing) and regulatory reforms to make sure that we utilise our stock of infrastructure as efficiently as possible and that we provide the appropriate signals for future investment. Second, we need to improve infrastructure sector **planning** and our approach to project assessment to be sure we are undertaking the right investment to achieve clearly defined objectives. Third, we need to specify target service levels and have transparent monitoring and measurement of **progress** towards them. These are the three imperatives of infrastructure reform.

The States' role in the reform effort will be important, in that they undertake most investment and must therefore do most infrastructure planning and project funding. The Commonwealth has, however, made infrastructure a key area of its overall policy focus and has now given itself a pivotal role in all areas of infrastructure.

We saw in the early 1990s with competition policy how the Commonwealth could use its larger financial resources and policy skills to drive towards the required outcomes. Such an effort is needed again, using the Council of Australian Government (COAG) processes.

This report examines recent trends in our infrastructure spend and then it looks at governance arrangements and the formation and role of Infrastructure Australia in particular. It then focuses on freight transport, urban transport, urban water, rural water, electricity and broadband communications. The headline points from the report are summarised in Exhibit 1.

EXHIBIT 1: OVERVIEW OF INFRASTRUCTURE PROBLEMS AND SOLUTIONS

Problem	Solution
<p>The “glass half empty” view</p> <ul style="list-style-type: none"> • The recent significant infrastructure spend has largely been a catch-up; we will see growing infrastructure demand but little public spending capacity • While Infrastructure Australia has already made a major contribution, its future role and approach now need to be refined • Our freight transport sector labours under many bottlenecks at our ports, intermodal hubs and an inability to address longstanding areas of under investment • Ever rising urban transport congestion, poorly performing public transport • Some poor investment choices, lack of an effective urban water market • Over-allocated rural water systems and inefficient use of water; considerable uncertainty • Our electricity sector now faces reliability and cost competitiveness challenges, and some longstanding inefficiencies • NBN decision-making has not yet been supported by analysis 	<ul style="list-style-type: none"> • Pursue the three infrastructure imperatives: <ul style="list-style-type: none"> – Policy reform to make better use of what we have – Improved Planning and project assessment – Monitor Progress against clear target service levels • Infrastructure Australia should maintain a pipeline of transparently assessed projects, help set target service levels and fill key policy gaps particularly in freight and urban transport • COAG institute a National Freight Implementation Plan to, inter alia, improve planning and price signals, and link road expenditure and revenue • Commonwealth/States prepare integrated urban transport plans to improve planning and pricing and target investment to achieve clear service levels • Remove barriers to urban-rural trading; COAG ask the Productivity Commission to outline detailed steps to creating active urban water market • Commonwealth reconsider and clarify aspects of its current policy framework and accelerate implementation • The Commonwealth adjust its CPRS compensation, and make measures to address Australia’s relative cost competitiveness its key Energy White Paper focus • Use the \$53 million NBN Implementation Plan to assess and settle the way forward with an open mind

Optimising our infrastructure pricing and spend to meet our future infrastructure challenges

Chapter 1 reviews recent trends in infrastructure spending based on both aggregate and Commonwealth and State data. The key conclusions are summarised in Exhibit 2.

EXHIBIT 2: INFRASTRUCTURE SPENDING TRENDS OVERVIEW

Commonwealth Government currently has a minor role in national infrastructure spending (see Exhibit 1.4)

Observations

- There has been a recent increase in spend on economic infrastructure
 - Mainly from the States and the private sector
- The public sector-driven increases have largely been due to a need to catch up on a past underspend, not to position for future growth
- There will be limited future public sector funding in coming years given the Commonwealth’s 2% spending cap, and the limits on States’ finances



Key conclusions/proposed way forward

- 14% of the Commonwealth’s stimulus spending went on economic infrastructure
 - Very few projects were “shovel ready”; Infrastructure Australia’s pipeline can address this in future
- The Commonwealth’s stimulus package saw money spent on urban metro rail and ports, which increases the Commonwealth’s future accountability in these areas
- We therefore need to:
 - Undertake **Policy** reform, to make better use of the current infrastructure stock
 - Improve sector and project **Planning**
 - Monitor **Progress** transparently towards target service levels; the Commonwealth should request Infrastructure Australia to work with States to set these

Australia has seen a significant recent increase in our spend on economic infrastructure, driven mainly by the States and the private sector. This has been timely given the recent economic crisis. It has also been assisted by the Commonwealth's stimulus package which saw 14% of the spending on economic infrastructure. Given the need to spend quickly this percentage was limited by the number of "shovel ready" projects.

The concern is that it appears much of this expenditure has been directed at catching up a past underspend. It is difficult to draw this conclusion with certainty, however, given the lack of detailed information on Australia's infrastructure performance and needs.

An important development has been the Commonwealth's entry into spending on urban transport and ports, which previous Commonwealth Governments had not done.

There will likely be limited Commonwealth and State funding for infrastructure in future years. This highlights the need to focus on the policy reform of infrastructure pricing and regulation, to improve planning and project assessment and to specify clear service level objectives and monitor progress towards them.

Having the most appropriate governance structures for infrastructure decision-making

Chapter 2 briefly canvasses the governance structures which should underpin infrastructure reform, and then assesses the initial progress of Infrastructure Australia. The key points from this chapter are summarised in Exhibit 3.

EXHIBIT 3: APPROPRIATE GOVERNANCE STRUCTURE OVERVIEW	
Observations	Proposed way forward
<ul style="list-style-type: none"> • The Commonwealth has now taken some accountability for urban transport, ports and urban water outcomes with its recent spending decisions • The Commonwealth appears to have limited the transparency of Infrastructure Australia's assessment processes • There has still been no real audit of Australia's infrastructure outcomes and policy • Infrastructure Australia's role and intended immediate actions may overlap with the roles of some other entities • There are a number of issues that need to be addressed concerning the involvement of the private sector in infrastructure projects 	<ul style="list-style-type: none"> • COAG should be the key driver of our infrastructure reform agenda across all sectors • Refine the role and processes of Infrastructure Australia, so that it: <ul style="list-style-type: none"> – Maintains a rolling pipeline of projects against strict and transparent criteria of completed pre-feasibility studies and a statement of planning context – Works with all governments to set target service levels in all infrastructure sectors – Has a key role in freight and urban transport policy – Addresses specific market or regulatory failures or other bottlenecks • In addition, Infrastructure Australia should advise on a range of specific issues to do with appropriate project delivery models and on best practice approaches for private sector involvement in infrastructure projects • The Productivity Commission should be asked to undertake the regular audits of Australia's infrastructure

The Commonwealth's recent spending on urban public transport and ports highlights its current role in all aspects of infrastructure. This reinforces the ability of COAG to be the driver of infrastructure reform in Australia. The Commonwealth needs, however, to specify its own role within this so that the States remain accountable for their own infrastructure.

Infrastructure Australia has already made a major contribution. It has raised the awareness of our infrastructure problems, pointed to sensible directions for change, and advised the Commonwealth Government to direct funding into the new areas of urban transport and ports.

There have, however, been problems. First, Infrastructure Australia did not release the cost-benefit analysis which it claims justifies the projects recently recommended for funding. Second, Infrastructure Australia's audit of Australia's infrastructure has been at best a high level appraisal, which is understandable given the brief time it had to do the audit. The projects recommended by Infrastructure Australia, for example, were based on submissions and did not flow from any deep assessment of overall need. Finally, Infrastructure Australia has set itself a work program that does not appear to take account of the role of many existing and sector specific institutions.

Infrastructure Australia needs to address these issues, and refine its role. As shown in Exhibit 3, there should still be a crucial role for Infrastructure Australia in shaping Australia's future infrastructure performance.

Given this role, it is suggested that the Productivity Commission, not Infrastructure Australia, should undertake the proposed audit of Australia's infrastructure. We need to separate the auditor from the entity that has considerable accountability for performance.

Finally, there is a debate concerning the most appropriate form of involvement of the private sector in infrastructure projects. There are many improvements that can be made, and there are significant choices. Infrastructure Australia should be asked to further advise on these issues.

Moving our freight efficiently and effectively

Chapter 3 reviews the longstanding problems facing our freight sector, it then describes the results of a range of important reviews which have identified the broad solutions to these problems, and then it proposes a way forward. This is summarised in Exhibit 4.

EXHIBIT 4: FREIGHT TRANSPORT REFORM OVERVIEW		
Long described problems	Recent decisions, reports	Proposed way forward
<ul style="list-style-type: none"> • Poor planning, some historical underfunding <ul style="list-style-type: none"> – Especially to complete value chain links • Inconsistent state transport regulations <ul style="list-style-type: none"> – Raising costs, causing inefficiency • Inappropriate user charges <ul style="list-style-type: none"> – Providing poor usage signals • Road user charges not linked to road providers <ul style="list-style-type: none"> – Users pay for what is spent but projects must battle budget guidelines without recognition of user funding • We have many particular market/government failures <ul style="list-style-type: none"> – e.g. Port Waratah 	<ul style="list-style-type: none"> • Infrastructure Australia has highlighted most of these problems • The Productivity Commission and the Henry Tax Review have highlighted the inappropriate road user charges, the lack of a link to road provision • The AusLink corridor studies and the work of Infrastructure Australia have identified many key priority projects • COAG has agreed to: <ul style="list-style-type: none"> – Begin to implement new road charging mechanisms leading to mass distance charging – Uniform transport regulation, but not until 2013 	<ul style="list-style-type: none"> • COAG develop within a year a National Freight Implementation Plan to chart the way forward drawing on the Commonwealth Treasury, Infrastructure Australia and NTC as appropriate to: <ul style="list-style-type: none"> – Develop a rolling freight project pipeline targeted to address particular freight bottlenecks – Accelerate mass distance and locational pricing and uniform regulation reforms – Settle the institutional arrangements to link road spending and revenue – Set target service levels that the Plan aims to achieve in terms of travel times, reliability, efficiency

Our freight sector has laboured under many longstanding problems. Evidence of poor planning is shown in the often inadequate intermodal facilities, the links to many of our ports and the under investment in our railways. Making matters worse have been inappropriate user charges for trucks, which send the wrong signals for road usage and also damage the signals for rail investment. In addition, we do not have national freight markets, but instead have different and therefore very costly state regulations covering heavy vehicles and trains.

There has been a lot of work on these problems in recent years. Not only has Infrastructure Australia identified many of the solutions, but the Productivity Commission and the Henry Tax Review have highlighted the inappropriateness of some road user charges and the lack of a link from these charges to road funding. The AusLink corridor studies have also identified many of the bottlenecks in the system.

We now have the building blocks to develop a National Freight Implementation Plan which can bring together the policy, regulatory and spending imperatives. Indeed, making simultaneous changes is the only way to address the problems of our freight sector.

It is recommended that COAG, drawing on the Commonwealth Treasury, Infrastructure Australia and the National Transport Commission, develop this plan over the next year. While this timetable may be seen as short, it is sufficient to put the first of a rolling series of plans in place to address our freight problems in the years ahead. We do not need more reviews; it is now time to make tangible progress.

Low and stable levels of transport congestion in our cities

Chapter 4 highlights the growing transport congestion in our cities, but then lists some positive recent developments including increased state funding and the Commonwealth's desire to help address our urban transport problems. With these recent developments there seems a clear way forward. The key points are summarised in Exhibit 5.

EXHIBIT 5: URBAN TRANSPORT OVERVIEW		
Longstanding concerns	Recent developments	Proposed way forward
<ul style="list-style-type: none"> • Rising urban congestion in all our major cities <ul style="list-style-type: none"> – Seemingly on an unstoppable rising trend • Generally poor quality and inadequate public transport <ul style="list-style-type: none"> – Both new investment and improved efficiency is needed 	<ul style="list-style-type: none"> • Increased State spending on urban transport infrastructure, but may not be sustainable • The Commonwealth has now embraced a major role for itself in urban transport infrastructure and planning <ul style="list-style-type: none"> – \$4.6b funding to urban metro projects – Future priority projects identified • Commonwealth Infrastructure Minister says the “Commonwealth's recent exile from the urban policy arena has ended” • Infrastructure Australia establishes Major Cities Unit “to identify opportunities where federal leadership can make a difference” • COAG establishes a Task Force to improve urban planning • Commonwealth Treasury and Henry Review both lending strong support to congestion pricing 	<ul style="list-style-type: none"> • The Commonwealth using Infrastructure Australia as appropriate work with relevant States to prepare integrated urban transport plans covering: <ul style="list-style-type: none"> – Improved transport planning to meet particular guidelines and transparent project assessment processes – Rolling pipeline of projects, meeting strict criteria – Active steps to reduce congestion on roads, including a clear path to congestion charging – Active steps to improve public transport including new investment and a clear path to improved efficiency – Clear target service levels

The increasing road and public transport congestion in our cities currently seems unstoppable. This is both confirmed by the Bureau of Transport and Regional Economics projections and by the realisation that Australia's population is growing rapidly.

There have been recent increases in spending which catch up some of the past underspend. In addition, there is growing recognition that we need to dramatically improve our urban transport planning systems, and that we cannot spend our way out of this problem. Increased spending without, for example, congestion pricing will achieve little.

While the States are primarily responsible for urban transport, the Commonwealth's entry into this area allows us to take a new approach. Agreement between the Commonwealth and each relevant state on formal urban transport plans for each of our capital cities can facilitate bringing the necessary components of improved urban transport together. This includes improved planning and project assessment, innovative pricing policy, measures to improve the efficiency of public transport, and well targeted spending to achieve clear target service levels against which there should be regular reporting.

Ensuring continuing sufficient supply of urban water

Chapter 5 looks at the recent significant investment and therefore the improvement in the level of our available urban water supplies, and discusses how we can ensure that severe shortages do not again threaten to constrain our economic growth. The main points of this chapter are summarised in Exhibit 6.

EXHIBIT 6: URBAN WATER OVERVIEW	
Observations	Proposed way forward
<ul style="list-style-type: none"> • States have finally acted to boost their water supplies so that the immediate water demand can be met, including with climate independent desalination • Some supply additions may not have been least cost • In particular, rural to urban trading was often ruled out • Still no moves to establish a well functioning urban water market to provide consumer choice, and reduce the chances of past problems re-emerging 	<ul style="list-style-type: none"> • A timetable should be set for each State to implement the National Urban Water Planning Principles. As part of this, each jurisdiction should publish and continually update a robust cost curve of all available supply options, and the results from scenario planning of demand and currently available supply • Barriers to urban-rural water trading should be removed • The Productivity Commission should undertake a comprehensive review of how best to implement urban water reform covering competition, trading, governance and pricing

Our past reports have highlighted that the shortages of water in our cities were essentially the result of a lack of spending on new supply sources over 20 years. While climate change appears to have reduced the flow of water to our dams, in some cases significantly, this cannot be allowed to obscure the fact that an increasing population was not catered for by investment in increased supply.

There has been a recent surge in investment in new urban water supply; it is now possible to say that supply can meet demand in all our cities, at least for the immediate future. The increased supply has included desalination plants which provide a source of water that will still be available under drought conditions.

This chapter highlights concerns about whether the least cost sources of supply were chosen. In many cases, for example, it was not possible to consider allowing rural water to be used in our cities despite the fact that a minor allocation of rural water can often constitute a major source of low cost urban water supply.

Looking forward, each State needs to ensure that already agreed processes are implemented for assessing urban water supplies, including publishing a cost curve of the available supply options, including using rural water. More important, we need to begin the reform of our urban water sector so that we create an active market whereby consumers can obtain the supplies they need at prices that will ensure the required investment. Such steps should ensure that we do not again see an unnecessary shortage of urban water supplies.

Maximising the environmental and economic outcomes from our rural water

Chapter 6 looks at the longstanding issues of over-allocation and the constraints on moving water to its highest market value use. While there have been attempts to address these issues since 1994 it is only with the 2007 and 2008 Commonwealth legislation that we have the foundations on which to build the solution. The issue now is to clarify and adjust the approach and accelerate the timetable. The main points from this chapter are summarised in Exhibit 7.

EXHIBIT 7: RURAL WATER OVERVIEW		
Major 2007/2008 improvements	Emerging issues/concerns	Suggested response
<ul style="list-style-type: none"> • Changed rural water priority to ensure sufficient water for river flow and environmental assets, then irrigation <ul style="list-style-type: none"> – Reverses past priority • Have had referral of powers to take MDB-wide view • \$12b now available; have sufficient money for this major adjustment challenge  <ul style="list-style-type: none"> • Best chance to achieve original 1994 objectives • Major implementation challenge 	<ul style="list-style-type: none"> • Some activity needs better explanation; risks causing confusion and resentment • Slow codification of water rights • 2014/2019 implementation timetable appears too slow • Likely too little money for buybacks and structural adjustment, too much for irrigation infrastructure, to achieve environmental and economic objectives • Still important barriers to trade; general market opaqueness • Developments likely running ahead of institutions 	<ul style="list-style-type: none"> • COAG clarify the rural water objectives and framework it is working to (especially with buybacks, infrastructure) and provide a timely, detailed and transparent implementation plan, codify water rights and bring forward overall completion timetable • Commonwealth revise spending to allocate more to buybacks and structural adjustment to achieve both environment and economic objectives • COAG remove all barriers to trade • COAG review the need for new institutions, e.g.: <ul style="list-style-type: none"> – A national entity to standardise and record all water trades and develop and run the market (a water ASX/AEMO) – An independent body to purchase environmental water against clear guidelines

The Commonwealth and the States have been trying to address over-allocation and the inefficient use of our water since 1994. In many ways they have had success, particularly through the establishment of a water trading market which is innovative by world standards. While much progress has been made, however, the underlying problems were not being addressed.

The Commonwealth's water reform packages and legislation in 2007 and 2008 appear to provide the foundations for success. The Murray Darling Basin Authority has the power to cap water diversions and there is significant funding to increase irrigation efficiency and buy back water in targeted areas. Most importantly, environmental allocations must in future have priority so that at a minimum we will see improving river flow and the protection of particular environmental assets.

Achieving success, however, will require COAG to clarify the objectives and framework it is working to (for example, which environmental assets will be protected, and how), improve accountability, codify water rights, and accelerate the reform program. This will both take advantage of the current political focus and, more important, provide more certainty for those who depend on rural water supplies.

It will also be important to consider whether further institutions are necessary. In particular, there seems merit in an organisation that can play an ASX/AEMO-type role to standardise and record all water trades and develop and run the market.

Maintaining reliable and cost competitive electricity as a continuing source of economic advantage for Australia

Chapter 7 addresses three sets of issues: those which can affect the reliability of our future electricity supply, concerns over Australia's future relative energy costs, and the need to address a range of longstanding market efficiency issues.

Reliable electricity

The electricity sector now faces an important new issue, largely due to the Carbon Pollution Reduction Scheme (CPRS) and the expanded Renewable Energy Target (RET). Combined they require a massive change to our electricity sector and so provide significant operational and investment challenges to our ability to maintain reliable energy supplies. These points are summarised in Exhibit 8.

EXHIBIT 8: ISSUES CONCERNING ELECTRICITY RELIABILITY AND A WELL FUNCTIONING MARKET	
Key concerns	Proposed responses
<p>We cannot currently be certain we can maintain electricity supply reliability during the coming rebuild of our electricity supply system</p> <ul style="list-style-type: none"> • Operational challenges <ul style="list-style-type: none"> – Brown coal as intermediate plant – Large generation value loss leading to reduced maintenance – Intermittent wind generation – Increasing transmission congestion • Investment challenges <ul style="list-style-type: none"> – Huge financing need – Technology and carbon price uncertainty – Possibly few investors – Planning "speed bumps" • AEMC concerns/recommendations <ul style="list-style-type: none"> – More options to AEMO to procure capacity – More efficient load shedding provisions – Increase spot market cap – More flexible retail price changes 	<ul style="list-style-type: none"> • MCE consider the AEMC's recommendations with transparency, and some urgency • Commonwealth Government consider <ul style="list-style-type: none"> – "buying" extra protection for system security/ reliability through the CPRS compensation package – Longer carbon price certainty for generation investment than 5 years – Reducing working capital needs of generators – Referring the adequacy of the Retailer of Last Resort provisions to the AEMC for examination

There is a compelling argument that electricity prices will increase to ensure we have sufficient generation and associated network capacity to meet demand. This has been the experience since the beginning of the National Electricity Market. We cannot, however, now be certain we can maintain electricity reliability given the nature of the rebuild required in our electricity sector during the transition to a lower carbon economy. The economics of the current coal-fired generators which constitute 85% of supply will be changed considerably, as will their incentive to generate; we will have more intermittent generation; and capacity will come from areas not well served by the current transmission network. In addition, we have a huge financing task but uncertainty for investors.

These issues have been highlighted in a recent report by the Australian Energy Market Commission (AEMC)⁴. The AEMC has argued for more powers to the market operator to procure reserve capacity, more efficient ways of shedding load should the need arise, a large increase in the spot market price to attract the required additional peaking generation, and other measures.

The Commonwealth should do more than indicated by current policy settings to be certain of supply reliability. The risk is asymmetric: there are extremely high costs from not having sufficient capacity, and relatively low costs from having too much (which rising demand will eventually utilise anyway). It is argued that the Commonwealth needs to “buy” additional protection for system security and reliability through the CPRS compensation package: that is, the market operator will need more control over the capacity decisions of some of the main coal-fired generators, and over a longer period than the currently envisaged five years. In addition, there is an argument for longer carbon price certainty to underpin large capital intensive investment decisions, for steps to reduce the working capital requirements of generators under the CPRS, and for further consideration of the adequacy of the Retailer of Last Resort provisions.

Competitive electricity

One of Australia’s key sources of competitive advantage has been low cost energy. Over coming years, however, this advantage will be challenged. Exhibit 9 summarises the key points made in this section.

EXHIBIT 9: AUSTRALIA’S FUTURE RELATIVE ENERGY COSTS AND COMPETITIVENESS	
Key concerns	Proposed responses
<ul style="list-style-type: none"> • Retail electricity prices likely to double by 2015 due to: <ul style="list-style-type: none"> – CPRS – Expanded RET – Rising gas prices – Huge network capex spend • Other potential electricity price influences: <ul style="list-style-type: none"> – The growing mix of intermittent wind generation and high heat rate gas peaking plant – The need for extensive new transmission links to accommodate the RET – Many ad hoc energy efficiency measures – Rising generation capital costs through commodity prices, financing costs • Australia may not be well positioned to maintain its energy cost advantage over its competitors 	<ul style="list-style-type: none"> • Crucial role for Energy White Paper <ul style="list-style-type: none"> – Undertake scenario modelling to assess effects on our current low energy cost advantage – Canvass the best policy responses • The Energy White Paper should, inter alia: <ul style="list-style-type: none"> – Look to early RET phase out – Inform the nuclear debate – Construct cost curve of energy efficiency measures to allow transparency – Consider other policy responses beyond the narrow remit given to the AEMC

There will be many pressures on Australia’s cost of delivered electricity in coming years. Both the CPRS and the expanded RET will put upward pressure on prices, as will rising gas

⁴ *Review of Energy Market Frameworks in light of Climate Change Policies: 2nd interim report*, Australian Energy Market Commission, June 2009. Also see Addendum to Chapter 7 that summarises the AEMC’s recently released final report.

prices on the east coast of Australia. The large increased spend on network infrastructure that is underway will also have a profound effect. There are also other influences such as the likely mix of plant and the need for extensive new transmission links to accommodate the expanded 20% RET.

The Energy White Paper currently being drafted by the Commonwealth provides an excellent opportunity to model the various scenarios and assess the effect of all these influences on Australia's current low energy cost advantage. The White Paper can then address a range of questions, for example those listed in Exhibit 9, which could help determine how Australia should best respond to this challenge.

Efficient electricity

There has been a longstanding electricity reform agenda which governments have been progressing, but this has necessarily been interrupted by the policy focus on the CPRS and expanded RET. Exhibit 10 summarises some of these issues and how they could now best be taken forward.

EXHIBIT 10: THE REMAINING ENERGY REFORM AGENDA TO IMPROVE MARKET EFFICIENCY	
Key concerns	Proposed responses
<ul style="list-style-type: none"> • We need less political, more flexible arrangements for increasing retail electricity prices 	<ul style="list-style-type: none"> • Remove price caps, or let AER be responsible for them with uniform methodology
<ul style="list-style-type: none"> • Particularly as we seek to improve energy efficiency we need a faster timetable for the rollout of two-way meters, intelligent networks 	<ul style="list-style-type: none"> • All governments commit to follow the Victorian example at a minimum
<ul style="list-style-type: none"> • There remains a bias to State-based transmission planning (will the National Transmission Planner assist here?) 	<ul style="list-style-type: none"> • Efficient MCE consideration of the AEMC's recommendation for load export charging
<ul style="list-style-type: none"> • There is a continuing need for improved regional and locational signals, but much more so now with the CPRS and expanded RET 	<ul style="list-style-type: none"> • Efficient MCE consideration of the AEMC's recommendations for congestion pricing mechanism and also generation TUOS
<ul style="list-style-type: none"> • There is now increased urgency to allow retailers to offset their spot and contract exposures with AEMO 	<ul style="list-style-type: none"> • MCE deal with this issue with more urgency
<ul style="list-style-type: none"> • The end of the NSW ETEF arrangements keeps being deferred 	<ul style="list-style-type: none"> • NSW set and stick to a firm date for removing ETEF

Resolving the issues described in Exhibit 10 is very important for the efficiency of our electricity supply and delivery.

Gaining the maximum productivity benefit from broadband communications

The productivity potential of an appropriate communications policy and investment framework for broadband is profound. The decision making framework behind the National Broadband Network has, so far, not adequately addressed a range of issues and concerns. The way forward is to use the implementation study currently underway to determine the right approach to broadband investment by the Government and others. These issues are summarised in Exhibit 11.

EXHIBIT 11: COMMUNICATIONS–OVERVIEW	
Key concerns	Proposed way forward
<ul style="list-style-type: none"> • NBN policy announcement without any supporting analysis • Potential conflict of interest in the Government being promoter and owner of the NBN as well as establishing the regulation framework for it • The future competition regime for telecommunications is unclear <ul style="list-style-type: none"> – Will the NBN be the dominant network, or part of a competitive wholesale market with multiple technologies? 	<ul style="list-style-type: none"> • Use the implementation study process currently underway to: <ul style="list-style-type: none"> – Explicitly define the aim of the NBN roll-out (what are we trying to achieve?) – Perform a detailed cost-benefit analysis of the NBN, including an assessment of the investment case for the proposed plan and of alternative approaches – Consider the optimal timing, scale and specification of any roll-out – Examine the productivity benefits arising from a broadband roll-out – Consider the appropriate regulatory regime for the NBN, including the competition regime • The Government should keep an open mind and not feel bound to follow previous announcements if the results of the implementation study suggest a better approach • At a minimum, there must be competition from wireless, and any new technologies

There are three concerns in relation to the NBN. The first is that a commitment was made to spend up to \$43 billion with little or no supporting analysis. There are, of course, many competing ideas to which such a sum could be put. This announcement of a major project without supporting analysis unfortunately also frequently occurs with State Government projects (see Section 1.4.2 in Chapter 1).

The second concern is that the Government is both the promoter and owner of the NBN as well as being responsible for its regulation. This is a potential conflict of interest and the Government will need to proceed with care.

The third concern goes to the effective competition regime. The NBN is not a natural monopoly as, for example, there can and should be competition from wireless broadband. The more difficult issue is whether the NBN should face competition from a lower priced and slower ADSL service.

The way to deal with these concerns is, firstly, for the current \$53 million implementation study to undertake the necessary cost-benefit analysis and to address the range of questions summarised in Exhibit 11. It is important to note that no significant money has yet been spent so the implementation study can shape the way ahead. In addition, the Government needs to keep an open mind and so not feel bound to follow previous announcements if the results of the implementation study suggest a better approach.

* * * *

The above suggests a massive future infrastructure agenda of great importance and significant complexity. We now, however, understand the issues and we largely know which direction we should be heading in. It is time to address the complex policy detail and push ahead aggressively with implementation.

SUMMARY OF PROPOSED FUTURE DIRECTIONS

SUMMARY OF PROPOSED FUTURE DIRECTIONS

Optimising our infrastructure pricing and spend to meet the future challenges

- Put the main focus on implementing the key policy reforms in each sector to make better use of available infrastructure and to improve investment signals.
- Improve planning and project assessment processes in each infrastructure sector, and make them transparent.
- Measure progress towards clearly specified target service levels. The Commonwealth should request Infrastructure Australia to work with each State to establish these.

Having the most appropriate governance structure for infrastructure decision-making

- COAG should be the key driver of our infrastructure reform agenda across all sectors.
- Refine the role and processes of Infrastructure Australia, so that it:
 - Maintains a rolling pipeline of projects against strict and transparent criteria of completed pre-feasibility studies and a statement of planning context
 - Works with all governments to set target service levels in all infrastructure sectors
 - Has a key role in freight and urban transport policy
 - Addresses specific market or regulatory failures or other bottlenecks.
- In addition, Infrastructure Australia should advise on a range of specific issues to do with appropriate project delivery models and on best practice approaches for private sector involvement in infrastructure projects.
- The Productivity Commission should be asked to undertake the regular audits of Australia's infrastructure.

Moving our freight efficiently and effectively

- COAG should develop a National Freight Implementation Plan within a year drawing on the Commonwealth Treasury, Infrastructure Australia and the NTC as appropriate to:
 - Develop a rolling, four-year freight project pipeline targeted to address particular freight bottlenecks
 - Accelerate pricing and regulatory reforms already endorsed by COAG and the ATC, in particular in relation to locational and mass distance pricing and uniform regulation
 - Settle the institutional arrangements to link road spending and revenue
 - Set target service levels that the Plan aims to achieve in terms of travel times, reliability and efficiency.

Low and stable levels of transport congestion in our cities

- The Commonwealth using Infrastructure Australia as appropriate should work with relevant States to prepare integrated capital city transport plans covering:
 - Improved transport planning to meet particular guidelines and transparent project assessment processes
 - A rolling pipeline of projects meeting strict criteria
 - Active steps to reduce congestion on roads, including a clear path to congestion charging
 - Active steps to improve public transport including new investment and a clear path to improved efficiency
 - Clear target service levels that will be transparently monitored.

Ensuring continuing sufficient supplies of urban water

- A timetable should be set for each State to implement the National Urban Water Planning Principles. As part of this, each jurisdiction should publish and continually update a robust cost curve of all available supply options, and the results from scenario planning of demand and currently available supply.
- Barriers to urban-rural water trading should be removed.
- The Productivity Commission should undertake a comprehensive review of how best to implement urban water reform covering competition, trading, governance and pricing.

Maximising the environmental and economic outcomes from our rural water

- COAG should clarify the rural water objectives and framework it is working to, especially for buybacks and infrastructure, and provide a timely, detailed and transparent implementation plan, which also clarifies accountability. COAG should ensure that rights to water are codified as quickly as possible, and bring forward the overall completion timetable.
- The Commonwealth should revise spending to allocate more to buybacks and structural adjustment to achieve both environmental and economic objectives, particularly greater certainty around water allocations being delivered in most years.
- COAG should remove all barriers to trade and develop an improved method of charging for transmission losses.
- COAG should review the need for new institutions, e.g.:
 - A national entity to standardise and record all water trades and develop and manage the market (an ASX/AEMO-type body)
 - An independent body to purchase and use environmental water against clear guidelines.

Maintaining reliable and cost competitive electricity as a continuing source of economic advantage for Australia

- The MCE should consider the AEMC’s recommendations quickly in relation to the implications of climate change policy on the electricity market.
- The Commonwealth Government should further consider ways to ensure reliability, including:
 - “Buying” extra protection for system security/reliability through the CPRS compensation package
 - Providing carbon price certainty for generation investment for longer than five years
 - Minimising the CPRS working capital requirements on generators
 - Reviewing the adequacy of the Retailer of Last Resort arrangements.
- The Commonwealth’s Energy White Paper should:
 - Test the effects of the current CPRS and other forces on our current low energy cost advantage through scenario analysis
 - Canvass the best policy responses
 - Look to early RET phase out
 - Inform the nuclear debate
 - Construct a cost curve of energy efficiency measures to allow transparency
 - Consider other reliability and cost effectiveness policy responses beyond the narrow remit given to the AEMC.
- We must maintain momentum on other longstanding reform issues such as:
 - Removing price caps or letting the AER be responsible for them using standard principles; prudential issues; and the introduction of two-way meters and intelligent networks.

Gaining the maximum productivity benefit from broadband communications

- The Commonwealth Government should use the implementation study process currently underway to:
 - Explicitly define the objective of the NBN roll-out
 - Perform a detailed cost-benefit analysis of the NBN, including an assessment of the investment case for the proposed plan and of alternative approaches to achieve the stated objective
 - Consider the optimal timing, scale and specification of the roll-out
 - Examine the productivity benefits arising from a broadband roll-out
 - Consider the appropriate regulatory and competition regime for the NBN.
- The Government should keep an open mind and not feel bound to follow previous announcements if the results of the implementation study suggest a better approach.
- At a minimum there must be competition from wireless, and any new technologies.

CHAPTER 1

OPTIMISING OUR INFRASTRUCTURE PRICING AND SPEND TO MEET OUR FUTURE CHALLENGES

Chapter 1: Optimising our infrastructure pricing and spend to meet our future challenges

1.1 Introduction and overview

With no comprehensive audit ever undertaken it is difficult to know the full extent of the deficiencies in our infrastructure, and therefore to understand the nature of the required solutions. For example, how much of the problem is due to a public sector investment underspend, how much to poor investment signals to commercial enterprises, and how much to poor use of the infrastructure we already have?

In times of serious economic downturn, such as the world has just experienced, however, there is unanimous agreement that now is the time to spend on economic infrastructure. Such a spend will boost the productive capacity of the economy which can help repay any debt build up. This consensus, however, is hard to turn into action as governments need an immediate stimulus with “shovel-ready” projects.

This Chapter examines the extent and nature of our recent infrastructure spend, and it assesses how this spend positions us for the future. It concludes as follows:

- There has been a recent increase in spending on economic infrastructure, mainly from the States and the private sector. While there were insufficient “shovel ready” projects for the Commonwealth to fund with its stimulus spending, this spending broke significant new ground with the funding of urban transport and port projects.
- This recent infrastructure spend seems mainly to have involved a catch up. With limited public sector funding likely to be available over coming years there is a serious challenge in funding our future infrastructure needs, particularly with an increasing population.
- To meet this challenge we must do at least three things:
 - Make much better use of the infrastructure we have by accelerating pricing and market reform
 - Better target our future spend, particularly through improved planning and project assessment processes
 - Set target service levels in each main infrastructure area, so that we know what we are seeking to achieve, and monitor progress towards them transparently.

The key points are summarised in Exhibit 1.1 and are discussed below in turn. Note that Chapter 2 deals with the role of the private sector in financing publicly initiated projects.

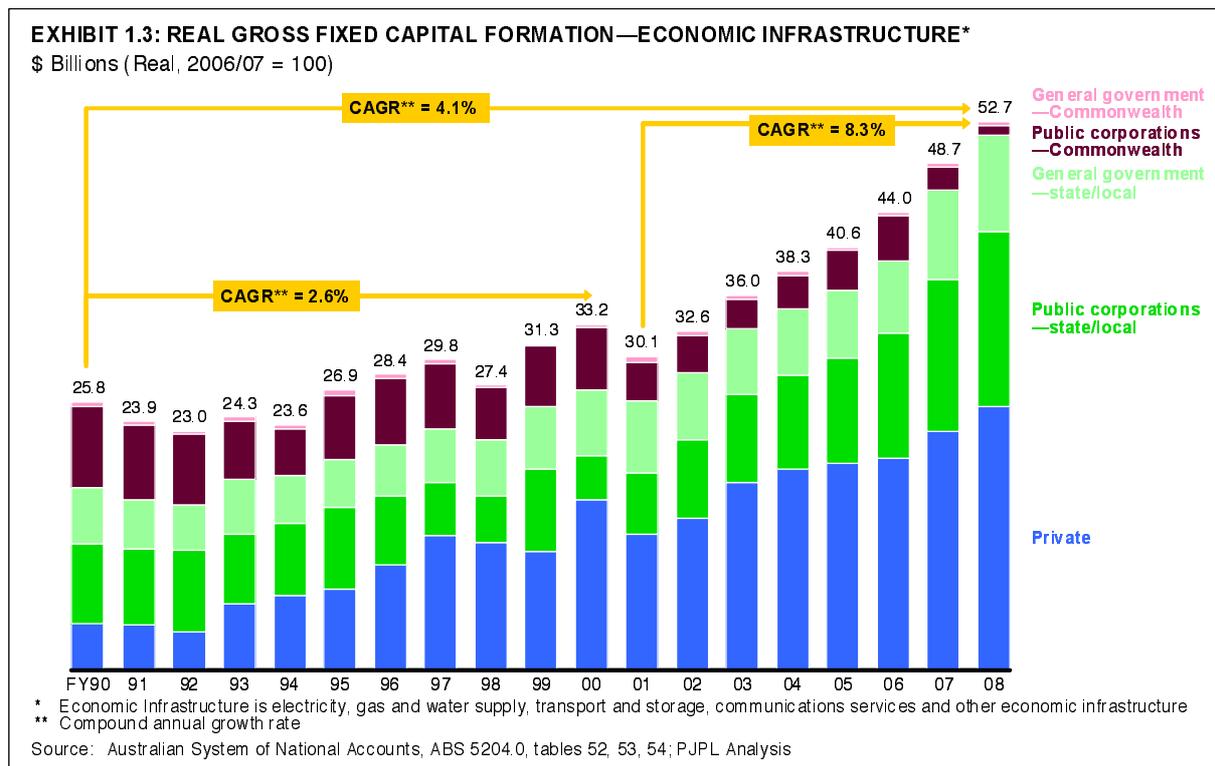
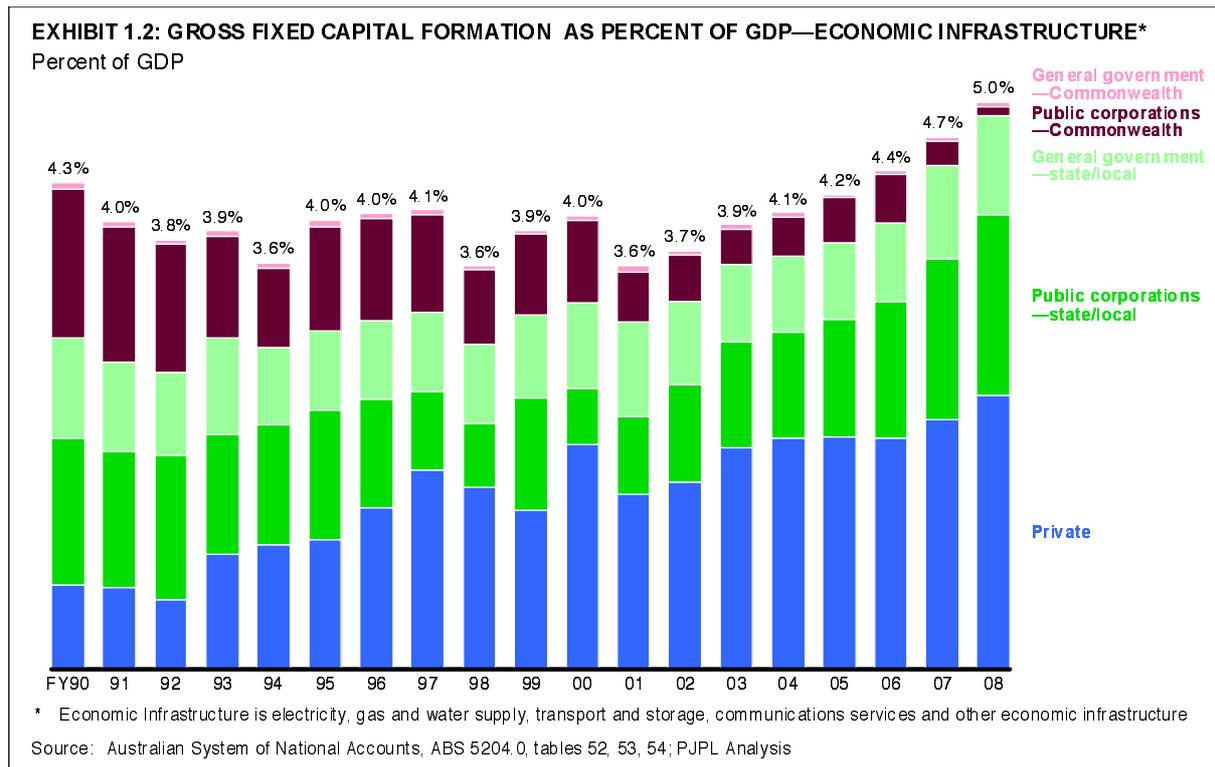
EXHIBIT 1.1: INFRASTRUCTURE SPENDING TRENDS OVERVIEW	
Commonwealth Government currently has a minor role in national infrastructure spending (see Exhibit 1.4)	
Observations	Key conclusions/proposed way forward
<ul style="list-style-type: none"> • There has been a recent increase in spend on economic infrastructure <ul style="list-style-type: none"> – Mainly from the States and the private sector • The public sector-driven increases have largely been due to a need to catch up on a past underspend, not to position for future growth • There will be limited future public sector funding in coming years given the Commonwealth's 2% spending cap, and the limits on States' finances 	<ul style="list-style-type: none"> • 14% of the Commonwealth's stimulus spending went on economic infrastructure <ul style="list-style-type: none"> – Very few projects were "shovel ready"; Infrastructure Australia's pipeline can address this in future • The Commonwealth's stimulus package saw money spent on urban metro rail and ports, which increases the Commonwealth's future accountability in these areas • We therefore need to: <ul style="list-style-type: none"> – Undertake Policy reform, to make better use of the current infrastructure stock – Improve sector and project Planning – Monitor Progress transparently towards target service levels; the Commonwealth should request Infrastructure Australia to work with States to set these

1.2 There has been a recent increase in spending on economic infrastructure

Recent years have seen an increased infrastructure spend driven by a combination of the need to make up for past neglect, and belatedly meeting the needs of the recent boom, particularly in minerals.

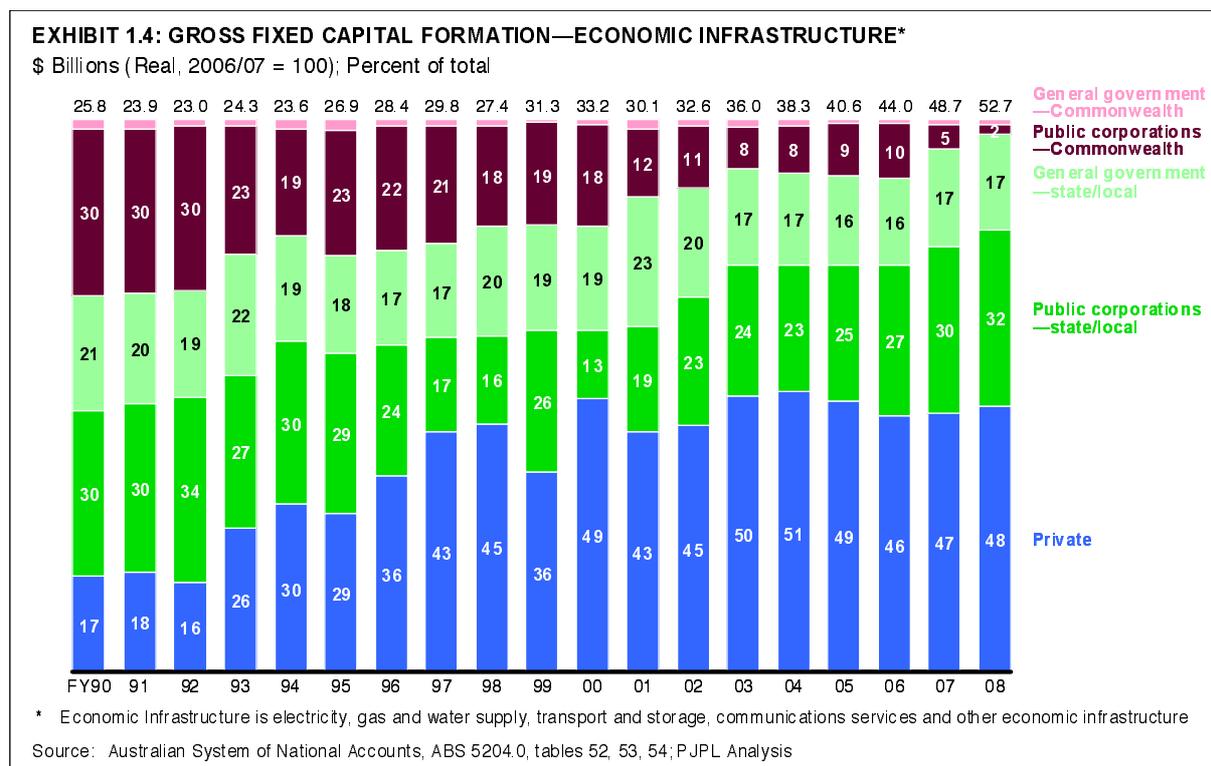
1.2.1 Some aggregate trends

Using ABS data, it is possible to breakdown infrastructure capital formation into its categories, and look specifically at economic infrastructure: electricity, gas and water supply, transport and storage, and communication. Exhibit 1.2 shows that investment in economic infrastructure has been steadily increasing as a percent of GDP from a low point of 3.6% in 2000/01 to 5.1% of GDP in 2007/08. This represents a growth rate of 8.3% in real terms over that period (see Exhibit 1.3).

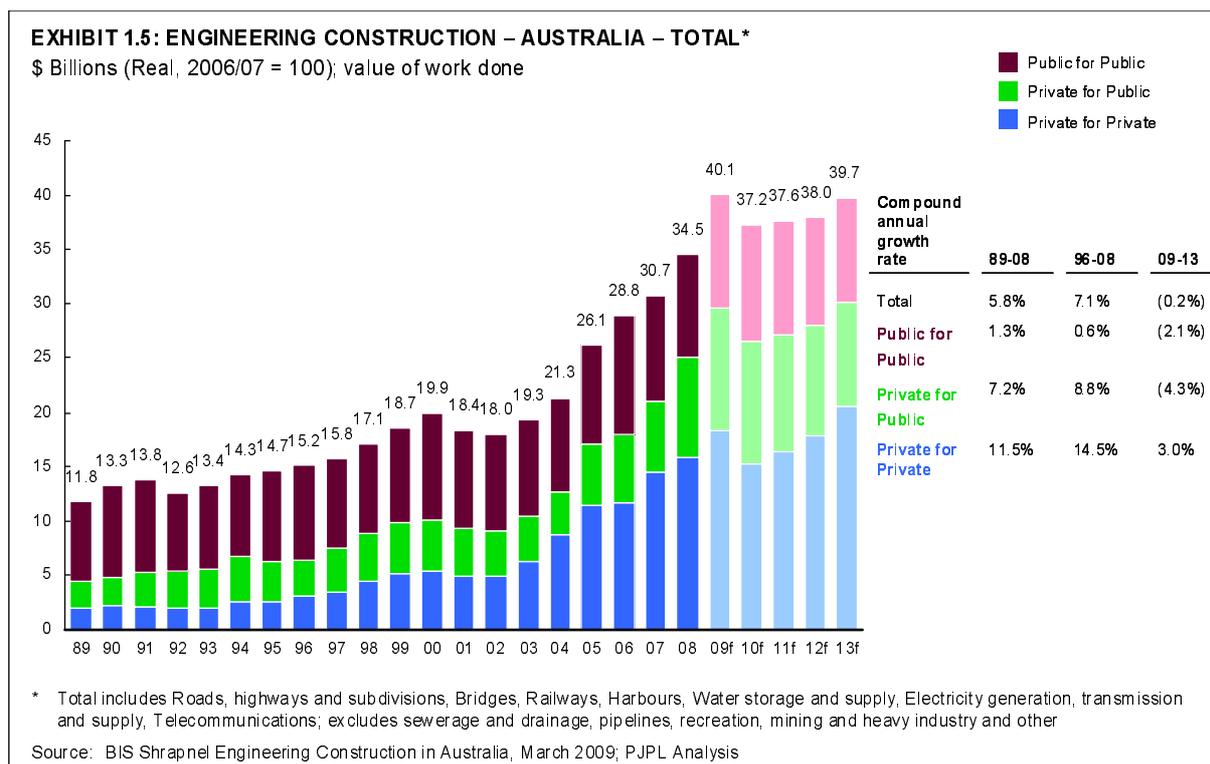


In 2007/08 the private sector was responsible for 48% of investment in economic infrastructure, with sub-national governments responsible for 49%, of which 65% was undertaken by public corporations (Exhibit 1.4). Sub-national governments have undertaken a steadily increasing proportion of investment, while the Commonwealth Government’s share has declined to very low levels. The share undertaken by public corporations has also

increased, while general government spending has declined. These trends reflect, in large part, recent corporatisations and privatisations.



BIS Shrapnel regularly publishes a report of Engineering Construction in Australia. The latest report (March 2009) shows our spend on economic infrastructure has grown steadily since 2002, and is expected to peak in 2008/09, after which BIS has forecast a decline, albeit staying at a high level (see Exhibit 1.5). Private sector work for the private sector has grown most strongly over the period, while private sector construction for the public sector has also seen solid growth. Public sector engineering construction for the public sector has been flat in real terms over the whole period and has therefore declined as a share of GDP significantly.



1.2.2 Recent State and Commonwealth spending

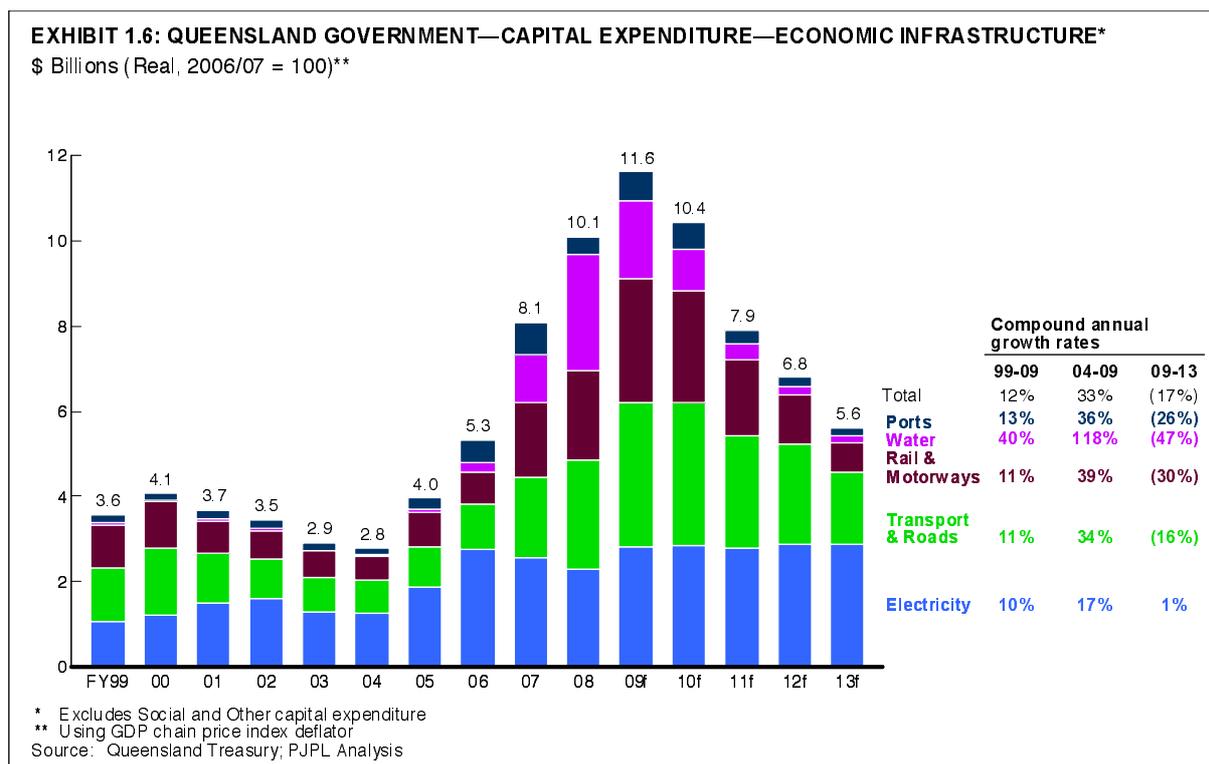
The States and Commonwealth have seen a large recent increase in infrastructure spending, but this is forecast to decline in most cases from a peak in FY09. The biggest boost has been from the States, and the increases are largely due to a catch up from past inadequate spending. A review of spending increases in Queensland, Victoria and the Commonwealth illustrates some of these trends.

Queensland

Capital spending on economic infrastructure in Queensland has grown more than five-fold from a low point in 2004, peaking in 2008/09 at \$12.6 billion⁵ (see Exhibit 1.6). The Queensland Government has planned a decline over the next four years to around \$5.6 billion⁶ on economic infrastructure.

⁵ \$12.7 billion in nominal terms

⁶ \$6.8 billion in nominal terms



The growth in the capital program over the last five years has been driven by a number of factors, primarily:

- Population growth;
- The expanded electricity network program with improved reliability standards following on from the Somerville report; and
- A large catch up in water projects.

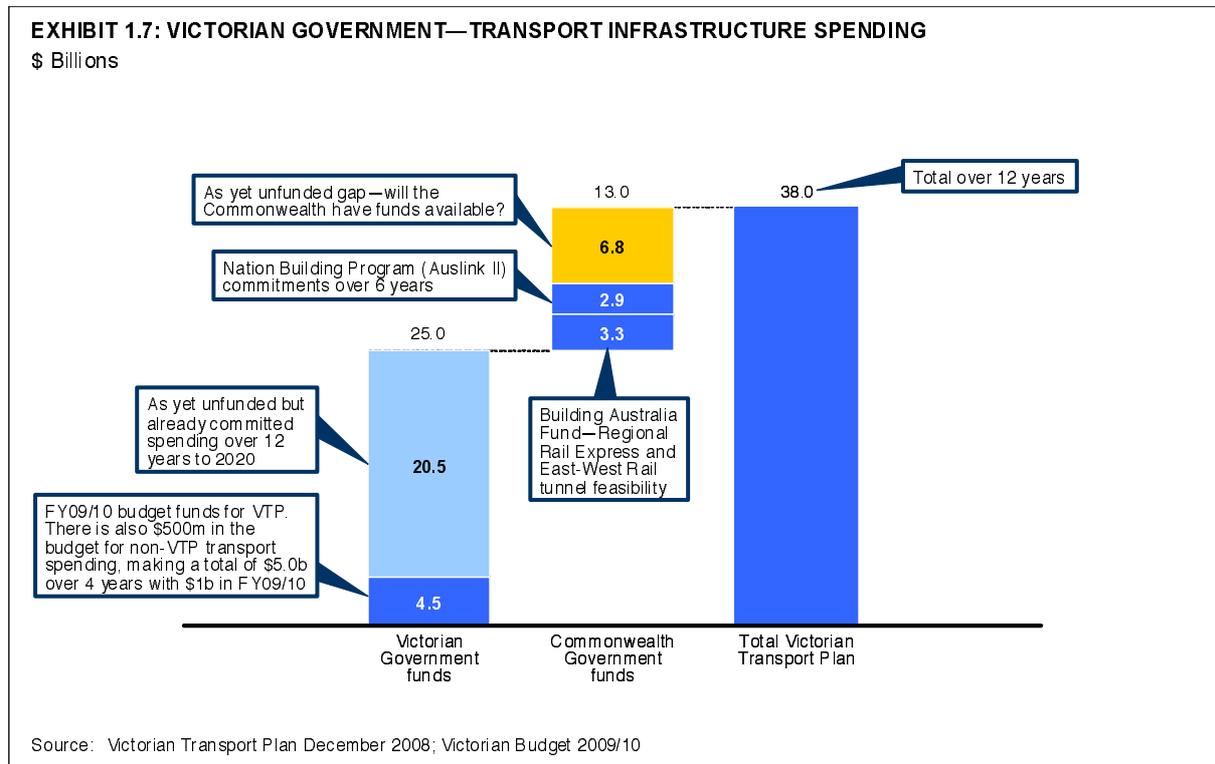
Exhibit 1.6 shows increased spending on roads and transport, particularly over the last four years. This spending is required to manage the State's growth requirements, and contains an important element of catch up. Road spending is based on the South-East Queensland Infrastructure Plan and Program (SEQIPP), which was developed in response to criticism due to increasing congestion. Queensland has also seen public transport patronage growing faster than population, which has led to an increase in spending on public transport.

Victoria

Public transport demand has been growing at record levels in Victoria over the last four years, and funding for public transport has increased around ten-fold over the last ten years, rising to around \$2 billion on capital expenditure in 2009/10. Spending on roads has remained fairly consistent over the same period.

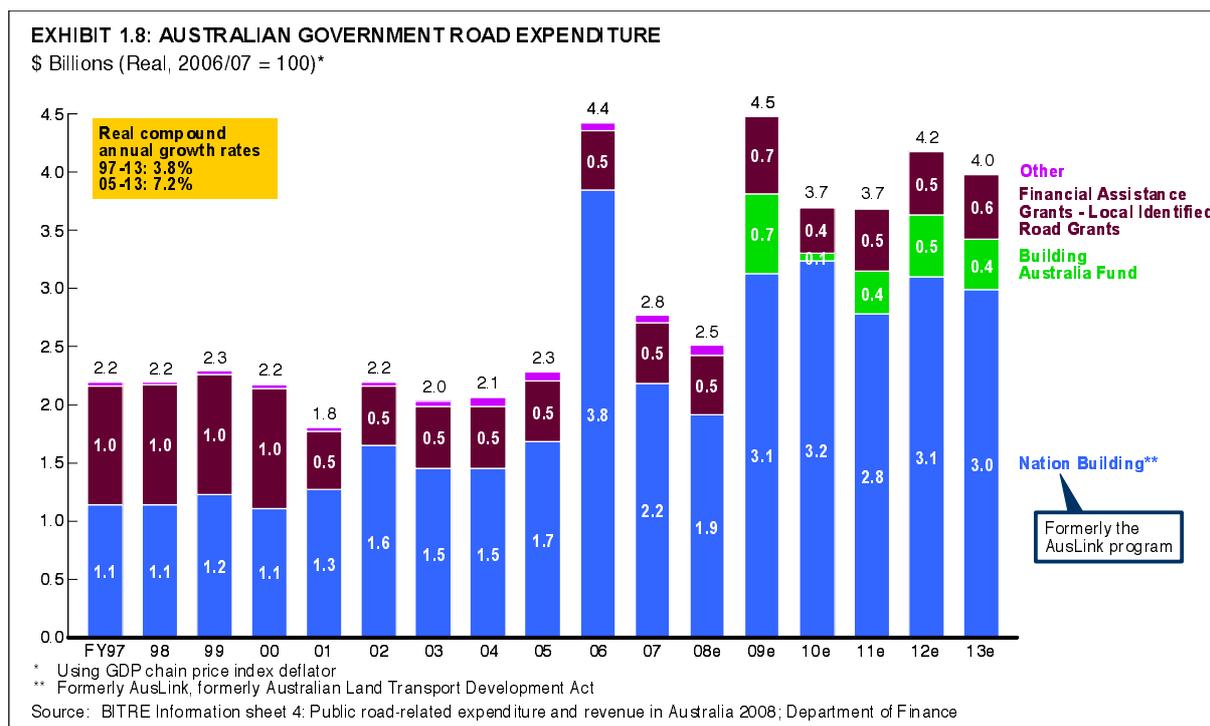
The Victorian Transport Plan (VTP) has \$38 billion of spending on public transport and roads over 12 years to 2020. The VTP identifies Victoria's transport needs over the next 12 years, and no other required spending is anticipated. Exhibit 1.7 shows that the Victorian Government has committed to \$25 billion over the 12 years of the plan, with the remainder expected to come from the Commonwealth. Of the \$13 billion of required Commonwealth

funding, \$6.2 billion has already been committed, and \$6.8 billion remains unfunded at this stage. The VTP does not, however, assume any private or PPP funding.



Commonwealth

The Commonwealth Government has also increased spending on economic infrastructure. Part of this increase comes from the stimulus spending packages, which are addressed in the following section, but the majority has come from a substantial increase in road spending under the previous AusLink program (see Exhibit 1.8). The projects under AusLink were a planned response to corridor studies to address longstanding bottlenecks. It can also be seen in Exhibit 1.8 that the additional funding from the Building Australia Fund is a relatively small addition to the existing underlying funding on roads.



1.2.3 Commonwealth stimulus spending

The global financial crisis prompted several rounds of stimulus spending by the Commonwealth Government. Of the \$76.2 billion in spending announced between October 2008 and May 2009, \$10.9 billion was allocated to road, rail and ports (see Exhibit 1.9). That is, some 14% was allocated to economic infrastructure.

EXHIBIT 1.9: COMMONWEALTH GOVERNMENT STIMULUS SPENDING PACKAGES
\$ Billions

Package	Date	Cash payments	Road/rail/ports	Education	Health	Other	Total
Economic security strategy	Oct 08	8.7				1.7	10.4
Regional infrastructure program	Nov 08					0.3	0.3
Nation building program	Dec 08		1.6	1.6		1.6	4.7
Nation building and jobs plan	Feb 09	12.7	0.9	14.7		14.1	41.5
Jobs program and compact	Apr 09					1.5	1.5
Nation building plan for the future	May 09		8.5	2.6	3.2	3.6	17.8
Total		21.4	10.9	18.9	3.2	21.8	76.2

Source: Commonwealth Government media releases 2008-2009

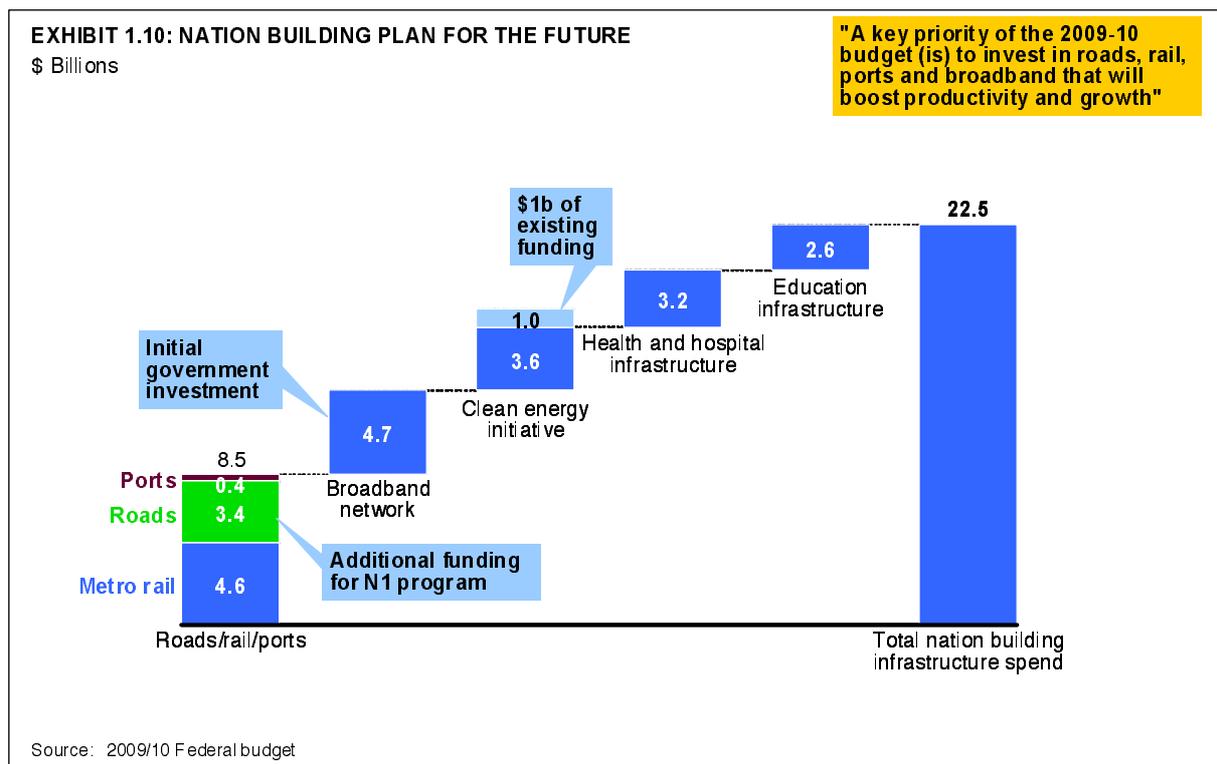
It is difficult to get a total figure for the stimulus spending: we have included measures which were explicitly announced as stimulus packages and, of those, measures which were designed to spend money quickly.

There are two major spending packages which have also been referred to by the Government as being stimulus spending which we have not included: the November 2008 \$6.2 billion Green Car package and the November 2008 \$15.1 billion COAG Reform Package. The COAG Reform package is, for example, spending over a five year period. It was announced as a \$15.1 billion investment to stimulate the economy and invest in a national reform package. While it has elements which were either increased or brought forward, it is probably a package which would have been developed anyway. We also did not include the \$4.7 billion investment in the National Broadband Network; it is not a measure where the money will be spent quickly, and had been previously announced in any case.

Packages which included spending on economic infrastructure were:

- The \$4.7 billion 'Nation building program' in December 2008. This included \$1.2 billion for an equity injection to the ARTC and \$400m for additional road funding.
- The \$42 billion 'Nation building and jobs plan' in February 2009. This included \$890 million for regional roads, blackspots and community infrastructure.

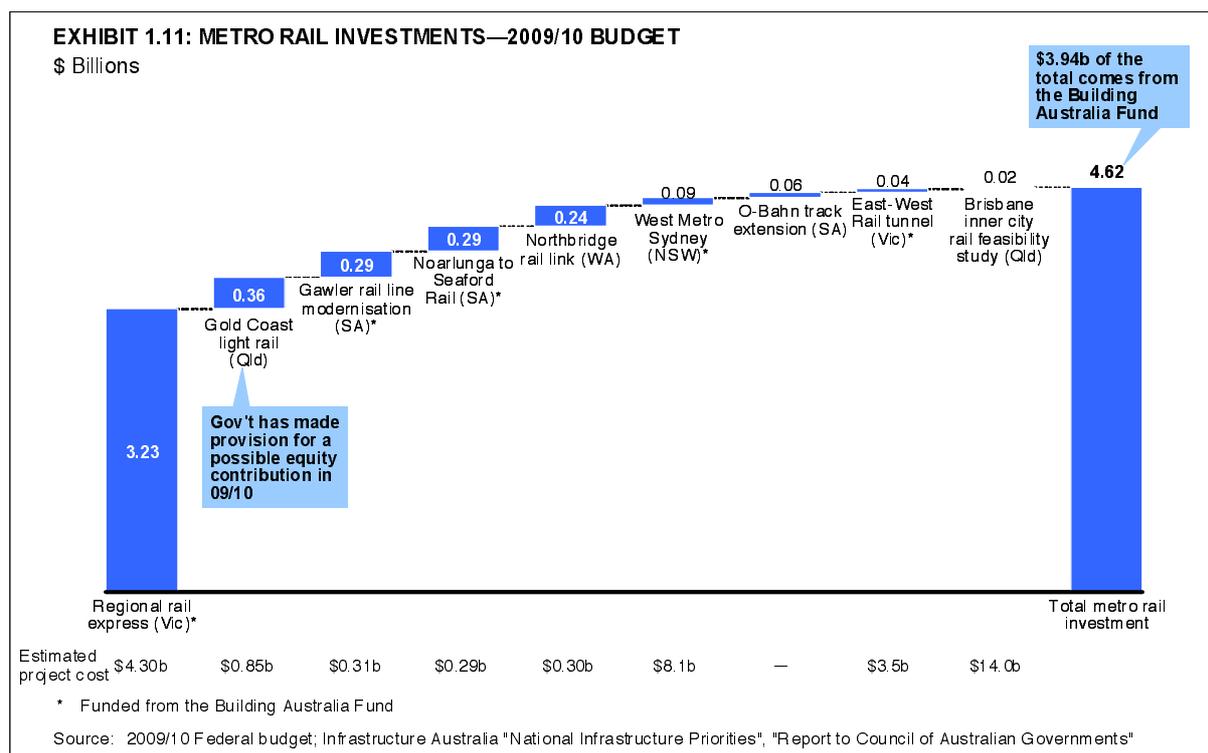
The largest package of economic infrastructure, however, came as part of the budget, and was the \$22.5 billion 'Nation building plan for the future'. This plan allocates \$8.5 billion to economic infrastructure; this has gone to roads (\$3.4 billion), metro rail (\$4.6 billion) and ports (\$389 million) (see Exhibit 1.10).



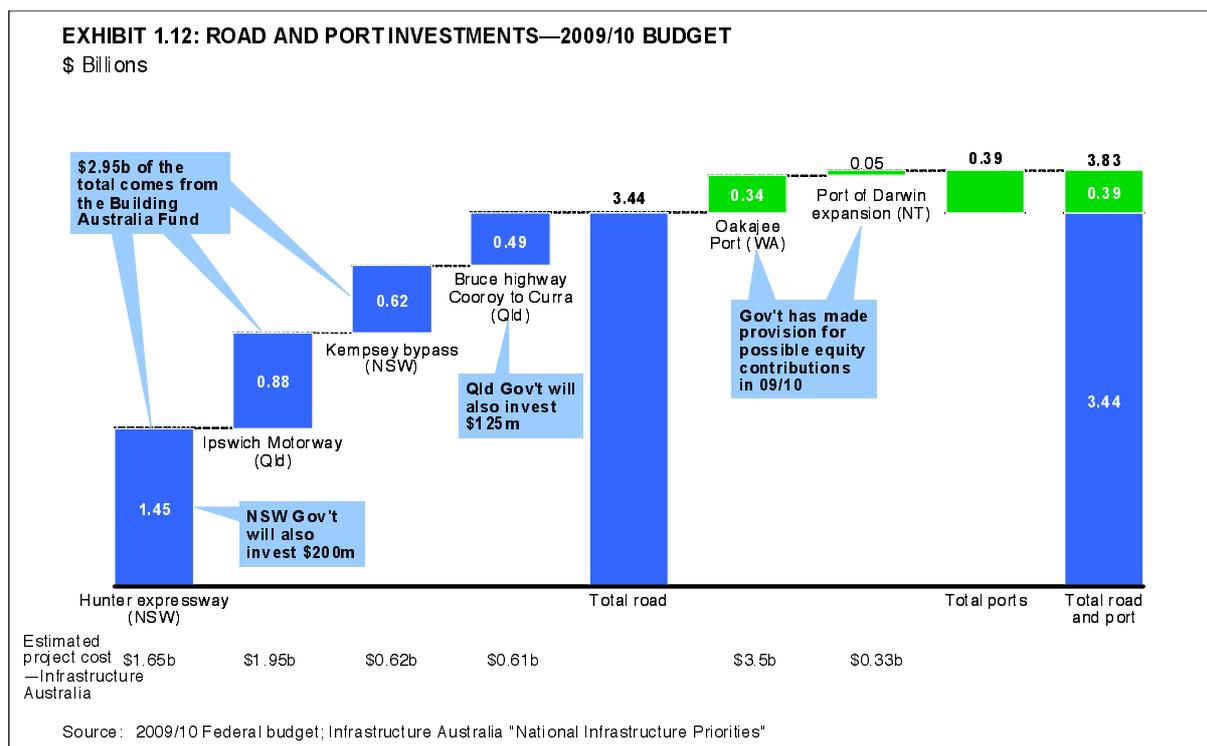
There are two extremely significant policy changes arising from this package. For the first time the Commonwealth Government invested in urban rail for public transport; previously this has been considered exclusively the domain of the States. The Commonwealth Government has also invested directly in ports.

It is important to note that 70% of the \$4.6 billion allocated to metro rail is dedicated to just one project, the Regional Rail Express in Victoria (see Exhibit 1.11). Other spending on metro rail includes:

- \$360m for the Gold Coast Light Rail, which the Queensland Government and Gold Coast City Council are also contributing to;
- \$91 million for detailed planning of the West Sydney Metro;
- \$40 million for pre-construction planning, design and engineering works for the East-West Rail Tunnel in inner-city Melbourne; and
- \$20 million for a Brisbane inner-city rail feasibility study.



The \$3.4 billion allocated to road funding is for four road projects, and \$2.95 billion of the money comes from the Building Australia Fund (see Exhibit 1.12). The Government has also made allowance for \$389 million of equity injections into two port projects, Oakajee Port in Western Australia and the Port of Darwin expansion.



The aim of the stimulus funding was to get money flowing in the economy as fast as possible. The spending on infrastructure will boost national productivity, but this was not the key objective. The projects selected largely reflect the recommendations made by Infrastructure Australia, which made its recommendations based partly on how ready the projects were to go ahead, and not necessarily on which projects were the best. There were, indeed, very few “shovel-ready” projects from which to choose which reflects badly on government infrastructure planning processes generally.

1.3 There is a serious challenge in funding future infrastructure needs

Without a comprehensive audit of Australia’s infrastructure (which was not completed by Infrastructure Australia – see next Chapter) it is difficult to determine the required infrastructure spend. Given that much of the recent increase in infrastructure spend appeared to represent catch-up expenditure, however, it is likely that there is still a large challenge to provide the infrastructure Australia needs for the future, particularly with a rapidly rising population.

The Bureau of Transport and Regional Economics (BTRE) in its Working Paper 71 estimated that the cost of urban road congestion will continue to increase, with total base cost of \$11.3 billion in 2008 rising to \$20.4 billion in 2020. It also estimated that the capital city road freight task is expected to show compound annual growth of 3.1%, rising from 33.3 billion tonne-kilometres in 2003 across all capital cities to 56.6 billion tonne-kilometres in 2020.

The BTRE has also forecast that the bulk freight task is expected to grow at 2.3% annually from 2003 to 2020, while the non-bulk freight task is expected to grow at 3.6%. Within non-bulk, interstate freight is expected to see the highest growth, at 3.8% annual growth from 2003-2020.

The Minerals Council of Australia recently published a report commissioned from ACIL Tasman looking at industrial and community infrastructure in Australia's major resources regions. It noted that "many growth regions around Australia now have significant infrastructure constraints." They identified infrastructure gaps in 21 Australian resource regions which, they say, if not filled, could lead to the anticipated growth in minerals production being constrained.

1.3.1 Commonwealth and Infrastructure Australia assessment of our need for infrastructure

The Commonwealth Government's view of Australia's current infrastructure problems is, if anything, more concerning than in our past reports written for the BCA. Recent comments made by the Commonwealth Government and Infrastructure Australia have also raised expectations about what they will do in relation to addressing Australia's infrastructure challenges.

Significantly, in a speech given in September 2008, the Treasurer Wayne Swan has noted "just how acute our (infrastructure) capacity constraints are, and the magnitude of the challenge to fix them", and that we "have a massive task ahead of us to build new infrastructure and renew old infrastructure". He also commented on the average age of Australia's infrastructure, saying that it has been rising since the late 1970s, and is now around 20 years, and that much of the large amount of public infrastructure put in place in the 1950s and 1960s will need to be renewed or replaced.

Infrastructure Australia has also described the problems facing Australia's infrastructure, and has outlined what it sees as the key issues by sector. These are summarised in Exhibit 1.13.

EXHIBIT 1.13: INFRASTRUCTURE AUSTRALIA—OBSERVATIONS ON INFRASTRUCTURE		
Sector	Observation	Elaboration
Freight transport	<ul style="list-style-type: none"> "The markets in which road, rail and shipping operate are distorted by prices that do not fully reflect costs [and] inconsistent regulatory regimes" "Issues requiring attention include planning, approval processes, supply chain coordination, and the provision, pricing and regulation of infrastructure" 	<ul style="list-style-type: none"> "... a national framework for all rail freight networks, not just inter-state networks, would improve planning, investment and decision making of rail capacity and supporting inter-modal terminals"
Urban transport	<ul style="list-style-type: none"> "... our urban areas face major pressures such as growing populations and changing demographics; increasing demands for better environmental management, amenity and affordability; ageing or inadequate infrastructure; and urban congestion" 	<ul style="list-style-type: none"> "... public transport systems are now operating with capacity constraints due to burgeoning demand" "Melbourne and Sydney trains now report severe overcrowding"
Energy	<ul style="list-style-type: none"> "One priority for the Australian energy sector is to develop a national energy market across the south east of Australia. At present, no such market exists" 	<ul style="list-style-type: none"> "The Australian energy market is a series of regional markets with limited interconnectedness and an ineffective market-based pricing for network services" "State exemptions from the national electricity rules ... make each state's electricity market unique"
Water	<ul style="list-style-type: none"> "Adaptability and security of water supplies are urgent issues for urban, regional and rural areas" 	<ul style="list-style-type: none"> "... cost reflective pricing, particularly in urban areas, will provide the majority of the signals and incentives needed to ensure that adequate infrastructure is built and maintained"
Communications	<ul style="list-style-type: none"> "A bold approach is required to improve Australia's communications infrastructure" "The benefits of a fast and accessible national broadband network ... are almost impossible to overstate" 	<ul style="list-style-type: none"> "The immediate challenge ... is the relative lack of accessible and affordable broadband and third generation telephony, particularly in regional and some parts of urban Australia"

Source: Infrastructure Australia "A Report to the Council of Australian Governments", December 2008

In May 2009 Infrastructure Australia published its National Infrastructure Priorities. In this document it identified nine priority projects which were ready to proceed, and added that funding the Ipswich Motorway would also satisfy the Building Australia Fund criteria. Eight of these ten projects received at least part funding from the Commonwealth in the May 2009 Budget.

They also identified 28 further projects for a 'priority pipeline'. These 28 projects fit one or more of Infrastructure Australia's seven themes for action and were identified as being of national significance. Six of the 28 projects received some funding from the Commonwealth Government in the 09/10 Budget and one had received funding as part of the Nation Building Program.

The projects identified as priority or priority pipeline have a total estimated identified cost of over \$60 billion, and there are four large freight projects and one port project which don't have estimated costs, so the total will be well above this. The total Commonwealth funding for these projects is \$8.7 billion, so there is an identified funding gap of well over \$50 billion.

1.3.2 Seeking the required funding

The Prime Minister has called the coming decade the 'building decade' and stated that a key future policy focus is the need for world class infrastructure.⁷ The problem is, however, that there seems to be little public money available for future spending on infrastructure.

The Building Australia Fund was originally meant to get \$20 billion from budget surpluses, but due to the downturn did not receive the full amount, and it has now been exhausted.

The Commonwealth Government has now committed to holding real growth in spending to 2% per year until the budget returns to surplus, expected to be by 2015/16. This 2% growth in spending will be difficult to live within given the expected increases in health and defence spending in particular. While, of course, there must be some additional money for infrastructure, given the Commonwealth's commitments, it is difficult to see that there will be significant funding.

It seems unlikely that the States will be able to continue to fund infrastructure at the levels they have been recently. Queensland has said that its planned future decline in spending is due to fiscal constraints and that the recent level of spending won't be sustainable in the future. New South Wales and Queensland also have high levels of debt, and need to maintain or improve existing credit ratings.

It is important to note that this reduction in expenditure will also affect the Government Trading Enterprise (GTE) sector. One of the key ratios looked at by ratings agencies is net financial liabilities to revenue. A large proportion of total state debt is in GTEs which are regulated entities. While these GTEs often have a secure income stream from regulated customers, their debt is counted with other government debt.

As outlined above, the Victorian Transport Plan also has an unfunded component of around \$6.8 billion, which was expected to come from Commonwealth funding. It is now not clear whether these funds will be forthcoming.

⁷ Sydney Morning Herald, July 25-26 2009, "Pain on the Road to Recovery", Kevin Rudd.

Given the constraints faced by governments, Australia may struggle to invest in the infrastructure we need for future growth. At the same time it will be important to avoid the stop/start investment in infrastructure of the past, and ensure that we do not only invest in infrastructure in response to a crisis. This could easily occur if, as the economy picks up, infrastructure spending again lags and so capacity constraints worsen.

1.4 There are three paths to follow

Responding to the constraints outlined above requires following three paths⁸. The first is **policy** reform, particularly in infrastructure pricing, to make better use of the existing infrastructure stock already available and to send the appropriate signals for investment by commercial entities. The second is improved **planning** to ensure a well-targeted spend, so as to get the best productivity gain from the money we have. The third path is to measure our **progress** towards clearly defined target infrastructure service levels.

1.4.1 Policy reform: making better use of what we have, sending the correct signals

There are likely to be significant gains from making better use of our “stock” of infrastructure as well as from boosting the “flow”, that is, investment in new infrastructure. It is also crucial to improve the signals for investment as this means commercial entities may then undertake this investment rather than the public sector. There are many specific ways to improve infrastructure policy which are outlined in the sector-specific subsequent chapters of this report.

One way to improve the use of existing infrastructure, for example, is to use pricing to ration use or spread use more effectively. There are many examples of inappropriate pricing for infrastructure services:

- Lack of mass distance charging for long haul freight vehicles
- “Postage stamp” prices, for example a common price for water across a State
- A lack of traffic congestion charging in our cities
- Low pricing for irrigation infrastructure
- A lack of inclined block pricing for water in some cities.

Other important policy steps would see more competition and private sector provision introduced into infrastructure markets, and regulatory reform. An example of the former is to introduce more market provision of urban water, and to increase the available options for urban water provision (for example, through rural-urban water trading). An example of the latter is uniform national regulation for heavy freight vehicles which can make our freight movement more efficient.

⁸ This section draws heavily on a paper written for the Australian Davos Connection by a group the author chaired, and which included important contributions from Peter Harris (Secretary, Department of Broadband, Communications and the Digital Economy, Canberra) and Ken Matthews AO (Chair and Chief Executive Officer, National Water Commission)

1.4.2 A more targeted spend through better planning

Infrastructure spending in Australia faces longstanding problems, as follows.

- State based planning suffers from stop/start funding, as when tight budget targets need to be met it is often easiest to cut infrastructure spending
- Infrastructure spending decisions are often single project based rather than positioned as part of a wider plan. Projects can, for example, transport people more quickly to another “choke” point
- Infrastructure spending decisions often respond to a “crisis” without appropriate feasibility assessment or the planning work being done
- Infrastructure spending is highly visible and so unusually politicised.

The above problems have been further reinforced in a paper from Blake Dawson Waldron, the Australian Constructors Association and Infrastructure Partnerships Australia titled “Scope for Improvement 2008”. The paper finds that there is a high prevalence of deficient scoping in Australian infrastructure projects, and this situation is getting worse. For example, they find that scoping inadequacies resulted in 26% of the projects over \$1 billion surveyed being more than \$200m over budget. The reason for this deficient scoping was a lack of experienced personnel, insufficient time to prepare the scope documents and an inadequate definition of project objectives.

Indeed, many projects are announced by governments as proceeding without a pre-feasibility study having been done; this could be occurring with as many as 50% of government project announcements. Such an approach stands in stark contrast to the private sector’s approach to project approval which is much more measured. The private sector understands that up front planning is the key to capital spending success.

State planning systems need considerable improvement as shall be discussed in Chapter 4 on urban transport. It is suggested in that Chapter that the Commonwealth work with the States to improve their planning systems. There is also scope for improved planning as shown in our recommendations in Chapter 3 on freight transport and in Chapter 5 on urban water.

A specific proposal that would also assist is for Infrastructure Australia to create a rolling pipeline of projects. To be approved by Infrastructure Australia to be part of the pipeline projects would need to:

- Have completed a **pre-feasibility study** that provides enough detail to scope the problem being addressed and to know the concept is valid; provide an independent view of project cost within an acceptable range; outline the project timetable and determine what it will take to implement the project including identifying the main issues and/or obstacles with its construction
- Be accompanied by a **statement of context** to show where the project sits within a wider plan or set of objectives e.g. how does a new road fit within the city’s transport plan? If this project proceeds what else will be required? This statement must also address the alternative options available to meet the project need.

Infrastructure Australia could develop and continually refine a number of quality assurance tests for these pre-feasibility studies and statements of context to improve the quality of proposals in the pipeline.

The projects in the pipeline will, therefore, be “implementation ready”, and will form part of a logical sequence of projects. It is envisaged that the infrastructure pipeline will be a long term one, and will look to projects well beyond any current funding allocations.

Each year Infrastructure Australia would recommend projects for Commonwealth infrastructure funding from this pipeline on a rolling (say) four year basis, stating publicly why the recommendations were made.

While the Commonwealth Government would make its own funding decisions there would in practice be a need to explain any deviation from the Infrastructure Australia recommendations. It is also important to note that the pipeline will evolve over time as circumstances change: it is not a queue. Projects will be selected on merit, not time in the queue.

All States, the private sector and even Infrastructure Australia could propose projects for the pipeline provided they have completed the pre-feasibility study and provided the statement of context.

In addition to using cost-benefit criteria Infrastructure Australia would take into account the level of State government or private funding available to a project. Indeed, the private sector could indicate it could undertake the project fully under particular circumstances.

Infrastructure Australia could also assist in the early and smooth introduction of new infrastructure by providing two incentives for States and/or private sector companies to suggest proposals for the pipeline:

- The prospect of some Commonwealth funding
- Recommending mechanisms such as legislative reform to address identified regulatory barriers to projects (e.g. gain a common approval process for environmental or planning issues between different levels of government).

From the above, there should be a significant demonstration effect. This should benefit all publicly sponsored projects including those outside the pipeline created by Infrastructure Australia.

1.4.3 Monitoring progress towards target service levels

In many areas of infrastructure it is not clear what standards of performance Australia is, or should be, seeking to achieve with its public infrastructure funding. This can mean that decision making on projects is ad hoc rather than made within a clear framework. Governments tend to avoid standards or benchmarks as they limit their freedom of action, and provide a basis for criticism of their performance. If used well, however, they can also provide the momentum to meet a deadline, much like Sydney did with the 2000 Olympics.

There is considerable merit in target service levels being set by all governments against which infrastructure sectors and particular projects can be assessed and the outcomes measured.

The type of target service levels envisaged is as follows:

- The boundaries within which congestion levels in each of our cities should stay as measured by each city's traffic model results, which could be published annually. This could be done in terms of, for example, average vehicle travel speeds for cars, or vehicle hours spent in congested traffic
- Corresponding measures for public transport, for example:
 - On-time running
 - Passenger congestion on buses and trains
 - Specifying that all citizens could have access to public transport of a certain standard within a particular distance from homes with a certain population density
- Targets for water service delivery, for example:
 - The frequency of different levels of water restrictions
 - Current and forecast usage levels as a percentage of sustainable supply
- Targets for the percentage of rural water surface and groundwater systems that are under stress
- Targets for road and rail travel times between the main intercity destinations, and possibly the extent of rail speed restrictions.

We suggest that COAG request Infrastructure Australia to provide a framework for these target service levels and that, within this framework, each State and Territory set their individual target service levels. An additional incentive for them doing so is that Infrastructure Australia could provide a positive project weighting when a project is proposed for inclusion on Infrastructure Australia's pipeline in a State where target service levels are set. This would allow the project's contribution to the achievement of these service levels to be assessed.

* * * *

The recent surge in infrastructure spending has helped Australia catch up some of the previous investment shortfall. We will now need to use more thoughtful and innovative approaches to ensuring Australia has the infrastructure it requires for the future.

CHAPTER 2

HAVING THE MOST APPROPRIATE GOVERNANCE STRUCTURES FOR INFRASTRUCTURE DECISION-MAKING

Chapter 2: Having the most appropriate governance structures for infrastructure decision-making

2.1 Introduction and overview

In Australia there are many governance issues in relation to infrastructure. There are, for example, debates over which level of government is accountable for certain infrastructure, there are said to be gaps in accountability, and there are debates over the appropriate role for the private sector in public sector initiated projects.

Some recent developments have perhaps sharpened these debates, as follows:

- The Commonwealth has now funded urban transport, ports and urban water projects, and so has accepted some accountability for outcomes in these areas.
- Infrastructure Australia has been formed and has an 18 month track record.
- The global financial crisis has affected the role of private sector infrastructure financing, and the associated issues to do with appropriate project structuring.

This Chapter canvasses these issues and concludes that:

- If anything, it is even clearer that COAG should be accountable for overall infrastructure outcomes
 - Within this overall accountability specific sector accountability can still be sufficiently clear
- Infrastructure Australia needs to clarify its future role
- There are some important issues in relation to private sector financing of publicly initiated projects, and Infrastructure Australia should be assigned some specific tasks.

The key points are summarised in Exhibit 2.1 and are discussed below in turn.

EXHIBIT 2.1: APPROPRIATE GOVERNANCE STRUCTURE OVERVIEW	
Observations	Proposed way forward
<ul style="list-style-type: none"> • The Commonwealth has now taken some accountability for urban transport, ports and urban water outcomes with its recent spending decisions • The Commonwealth appears to have limited the transparency of Infrastructure Australia's assessment processes • There has still been no real audit of Australia's infrastructure outcomes and policy • Infrastructure Australia's role and intended immediate actions may overlap with the roles of some other entities • There are a number of issues that need to be addressed concerning the involvement of the private sector in infrastructure projects 	<ul style="list-style-type: none"> • COAG should be the key driver of our infrastructure reform agenda across all sectors • Refine the role and processes of Infrastructure Australia, so that it: <ul style="list-style-type: none"> – Maintains a rolling pipeline of projects against strict and transparent criteria of completed pre-feasibility studies and a statement of planning context – Works with all governments to set target service levels in all infrastructure sectors – Has a key role in freight and urban transport policy – Addresses specific market or regulatory failures or other bottlenecks • In addition, Infrastructure Australia should advise on a range of specific issues to do with appropriate project delivery models and on best practice approaches for private sector involvement in infrastructure projects • The Productivity Commission should be asked to undertake the regular audits of Australia's infrastructure

2.2 The accountability of COAG for overall infrastructure outcomes should be strengthened

Both the Business Council of Australia and this author have long argued that the role of COAG is central to improving infrastructure outcomes. In our 2007 paper “Revitalising Infrastructure Reform” we classified effectively functioning Commonwealth-State relations as a “key enabler” of infrastructure reform.

COAG is now better placed to be responsible for overall infrastructure outcomes. First, its importance as an institution has been enhanced under the current Commonwealth Government, in some of the ways we had been calling for (for example, more frequent meetings).

Second, the Commonwealth has now decided to fund urban transport, ports and even urban water projects. This means that these sectors can no longer be seen as areas purely of State responsibility; that is, there can be no real argument that they should not be discussed at COAG.

There is concern, however, about overlapping accountability, and that the States might use the recent Commonwealth involvement in urban projects and issues to reduce their own efforts. We do not share these concerns.

First, as argued in Chapter 4 on urban transport, there are sound reasons for a role for the Commonwealth in urban issues. Second, it is difficult to see Commonwealth funding of urban infrastructure being other than at the margin.

Most important, however, we think voters have a clear idea about which level of government should be accountable for what issues. For example, they would increasingly now see the

Commonwealth as accountable for interstate freight transport, the Murray-Darling Basin, communications and the National Electricity Market. These sectors cross State borders, and in the case of electricity it is the Commonwealth which is now driving the CPRS and the RET revolution.

Likewise they will still see the States as accountable for urban transport and urban water. The Commonwealth can help with assistance on planning, policy and also some modest spend, but it is hard to see water shortages or traffic congestion in Sydney or Melbourne being blamed on the Commonwealth.

That said, the Commonwealth drives the COAG agenda and processes and so it is accountable if COAG is not driving general reform agendas across all infrastructure sectors.

2.3 Infrastructure Australia needs to clarify its future role

Infrastructure Australia was set up in 2008 to “develop a strategic blueprint for Australia's future infrastructure needs and facilitate its implementation”. Infrastructure Australia's functions are extremely broad and are set out in the Infrastructure Australia Act 2008, and summarised in Exhibit 2.2.

EXHIBIT 2.2: INFRASTRUCTURE AUSTRALIA—FUNCTIONS	
<p>Infrastructure Australia has the primary function of providing advice to the Minister, Commonwealth, State, Territory and local governments, investors in infrastructure and owners of infrastructure on matters relating to infrastructure, including in relation to the following:</p> <ul style="list-style-type: none"> • Australia's current and future needs and priorities relating to nationally significant infrastructure; • policy, pricing and regulatory issues that may impact on the utilisation of infrastructure; • impediments to the efficient utilisation of national infrastructure networks; • options and reforms, including regulatory reforms, to make the utilisation of national infrastructure networks more efficient; • the needs of users of infrastructure • mechanisms for financing investment in infrastructure 	<p>Infrastructure Australia has the following additional functions:</p> <ul style="list-style-type: none"> • to conduct audits to determine the adequacy, capacity and condition of nationally significant infrastructure, taking into account forecast growth; • to develop lists (to be known as Infrastructure Priority Lists) that prioritise Australia's infrastructure needs; • to review and provide advice on proposals to facilitate the harmonisation of policies, and laws, relating to development of, and investment in, infrastructure; • to evaluate proposals for investment in, or enhancements to, nationally significant infrastructure; • to identify any impediments to investment in nationally significant infrastructure and identify strategies to remove any impediments identified; • to promote investment in infrastructure; • to provide advice on infrastructure policy issues arising from climate change; • to review Commonwealth infrastructure funding programs to ensure they align with any Infrastructure Priority Lists; • to undertake or commission research relating to Infrastructure Australia's other functions; • any functions that the Minister, by writing, directs Infrastructure Australia to perform; • any other functions conferred on Infrastructure Australia by this Act or any other law.
<p>Source: www.infrastructureaustralia.gov.au</p>	

Infrastructure Australia has already made an important contribution in its short life. It has, for example, highlighted many problems with Australia's infrastructure, taken the Commonwealth into new areas of spending responsibility (urban transport, ports), completed its list of priority projects and provided best practice guidelines for public private partnerships for COAG's consideration.

There are, however, some issues that have arisen, and Infrastructure Australia's future list of priority tasks raises questions about its future role.

2.3.1 Lack of transparency

Infrastructure Australia indicated that it used a "rigorous, objective and independent process" to develop its list of priority projects. While it has published the criteria against which the projects were assessed, it has not published the assessment. We must therefore take their word for it that the process was a good one, and that the most appropriate projects were selected for inclusion in the list of priority projects and the priority pipeline. If Infrastructure Australia continues to take this less than transparent approach it risks losing the goodwill that it has so far been afforded.

Under this heading it is also worth noting that Infrastructure Australia endorsed the Commonwealth Government's investment of \$4.7 billion to develop the National Broadband Network (NBN), calling the NBN a "once-in-a-generation opportunity to address structural issues and improve the competitive environment". This endorsement comes despite the fact that neither Infrastructure Australia nor the Government has made any analysis of the costs and benefits of this plan public.

2.3.2 The infrastructure audit

The Report to COAG published by Infrastructure Australia in December 2008 was at too high a level to be called an audit, which is understandable given the time they had to do this. The conclusions reached could not be specific enough or fact-based. Infrastructure Australia's recommended projects were based on what projects were submitted to them, rather than an assessment of top down need.

In August 2005 the BCA published a paper outlining what should be included in a comprehensive audit of Australia's infrastructure titled *Recommendation to COAG for a National State of the Nation Infrastructure Audit*. In that document, we suggested that such an audit should be a 'performance and policy' audit. It would "focus on performance outcomes, the supply and demand balance and impediments to the required investment, rather than a physical assessment of whether what is there meets particular specifications. The audit would assess our infrastructure on the basis of 'fit for purpose' by being focussed on outcomes, not inputs."

We further recommended that the audit should be done every two years, and should address the following key questions:

- Is the current supply of infrastructure adequate to meet demand, now and in the foreseeable future?
- How is the infrastructure performing based on particular indicators?
- Are there any impediments to the required spend needed to increase investment or operational performance being provided in a timely fashion, or any form of distortion to appropriate decision-making?
- Are appropriate service standards being set and regularly monitored for monopoly infrastructure?
- Is the data that is needed being collected and made available?
- In particular, are any problems caused by inadequate attention being paid to externalities?

- Is international experience relevant to Australia's infrastructure performance and pricing?
- Are there any immediate investment priorities that require focus?

Infrastructure Australia's audit relied on the audits provided by the States in June 2008. These state-based submissions are not available on Infrastructure Australia's website, but some may be found on State Government websites. They largely do not deal with the above questions. There is limited evidence that they were relied upon as Infrastructure Australia made its project selection and prepared its report to COAG. The submissions provided by the states are, however, more detailed than the Infrastructure Australia's December 2008 Report to COAG.

Despite its shortcomings, however, the Report to COAG from Infrastructure Australia does set a demanding agenda for the Commonwealth Government to respond to. As discussed in Chapter 1, the identified problems have now been acknowledged by the Commonwealth Government, and they now need to be addressed.

2.3.3 Infrastructure Australia's role relative to other entities

In its National Infrastructure Priorities (May 2009) Infrastructure Australia outlined Actions it will undertake (see Exhibit 2.3). It has set itself the task of developing an Energy Strategy, a National Ports Strategy, a National Freight Network Strategy and two Water Strategies, among others. It will be important to understand how these strategies will fit in with the existing processes at the national level. There are some specific potential overlaps.

EXHIBIT 2.3: INFRASTRUCTURE AUSTRALIA'S THEMES	
Infrastructure Australia Theme	Actions ready to proceed
1. A national broadband network	• National broadband network
2. Creation of a true national energy market	• Energy strategy: actions for a true national energy grid - <i>to be developed</i>
3. Competitive international gateways	• National ports strategy - <i>to be developed</i>
4. A national freight network	• National freight network strategy - <i>to be developed</i>
5. Transforming our cities	• National Planning and Investment Framework – <i>to be developed</i> • National Framework for Public Transport Network Planning – <i>to be developed</i>
6. Providing essential Indigenous infrastructure	• Infrastructure for Indigenous Communities Framework - <i>to be developed</i>
7. Adaptable and secure water supplies	• Water strategy: actions for water security - <i>to be developed</i> • Regional towns water quality review - <i>to be developed</i>

Source: National Infrastructure Priorities, May 2009

In relation to energy, it is not clear what Infrastructure Australia's role is when the Australian Energy Market Commission (AEMC) is the rule maker for the nation's energy markets and the policy adviser to the Ministerial Council on Energy.

In relation to transport we have the National Transport Commission (NTC), which develops and submits reform recommendations to the relevant ministerial council, the Australian Transport Council, for approval. The NTC also plays a role in coordinating and monitoring implementation of approved reforms.

2.3.4 Defining a clear future role and agenda

Given the above, it would be helpful if Infrastructure Australia refined its future role and approach. We see five significant areas where Infrastructure Australia should focus its efforts.

First, Infrastructure Australia should have continuing input into both freight and urban transport policy, particularly given the need for public funding in these areas. In later Chapters we argue for a National Freight Implementation Plan and integrated urban transport plans to be agreed between the Commonwealth and each relevant State. Given the wide-ranging nature of the issues, Infrastructure Australia is well placed to assist in the development of these plans as requested by COAG and/or the Commonwealth Government.

Second, Infrastructure Australia should maintain a pipeline of projects that rely on public investment (e.g. in transport and urban water), as already discussed in Chapter 1. Infrastructure Australia should have no real role in assessing projects in sectors where there are existing institutions with the authority to do this, as can be argued for rural water and energy.

Third, as also discussed in Chapter 1, Infrastructure Australia should help governments set target service levels in all infrastructure sectors.

Fourth, Infrastructure Australia should keep advising on appropriate project delivery models and on best practice approaches for private sector involvement, as discussed in the next section of this chapter.

Fifth, Infrastructure Australia should also specifically draw attention to various market or regulatory failures where there is no other body in place to do so. It should also then advise on solutions. The problems at Port Waratah are an obvious example⁹.

There are two key areas Infrastructure Australia should probably not be involved in. First, Infrastructure Australia should not advise on policy where other entities are already set up to do this and where it does not have the detailed expertise, for example, in energy and rural water.

Second, we recommend Infrastructure Australia not undertake the policy and condition audits itself. If they did, it would mean that Infrastructure Australia was both responsible for advice on infrastructure issues and then the assessor of infrastructure performance. As we have recommended before, the Productivity Commission is best placed to carry out these biennial audits.

2.4 Some key issues in relation to the use of private sector finance for infrastructure projects need to be settled

It is now generally accepted that the private sector should own, for example, electricity generation and rail freight operators. This section, however, refers to the role of the private

⁹ See Chapter 3 for a discussion of the issues at Port Waratah

sector in financing public sector initiated projects through what are generally known as public private partnerships (PPPs). They have largely been used in road projects but are now used more widely (e.g. to deliver Victoria's desalination plant).

In a March 2009 report on Public Infrastructure Financing by the Productivity Commission estimated that public-private partnerships (PPPs) made up just 6% of public investment in all infrastructure 2006-07 in Australia overall. At this time private sector debt financing was plentiful, so PPP financing may struggle to reach these levels in the foreseeable future.

That said, however, when Infrastructure Australia identified its priority projects and its priority pipeline projects it indicated which of those projects were suitable for private sector involvement. Of the priority projects ready to proceed, only two of ten were identified as being suitable for private sector involvement. Looking forward, however, ten of the twelve 'international gateway' priority pipeline projects, five of the seven freight rail and road priority pipeline projects, and five of the nine 'transforming our cities' projects were identified as being suitable for private sector funding.

This section considers a number of topical issues in relation to the role of the private sector in financing projects.

2.4.1 Enhancing the attractiveness of projects for private financing

Under this heading there are some clear things to do, and some clear things not to do.

In relation to taxation, for example, we should clearly remove any distortions in the tax system against infrastructure in general, or against private sector financing, where these are identified. We should not, however, provide tax incentives to encourage private financing for its own sake. The private financing of infrastructure is sometimes appropriate, and sometimes not, and its role must expand or contract depending on its merits.

Likewise, there seems no advantage in infrastructure bonds as generally discussed. That is, if governments need to raise debt to fund infrastructure, they should do so as part of general debt financing. There seems little gain from identifying part of that as financing infrastructure unless the repayment of the debt is directly tied to the returns from a particular infrastructure investment.

There are some sensible steps governments can take, but most of these steps are required to improve all infrastructure projects, not just those that are privately financed. For example:

- Governments should better balance the risks they transfer to the constructors/private owners to avoid transferring risks best managed by the governments themselves e.g. geology risks when all the information came from the government with no time for independent assessment; or the risk of delays in the granting of government approvals.
- Governments should seek to truncate the process of selecting the preferred bidder. Recent Queensland projects, for example, saw three bidders tie up to around 500 people each for 18 months, with each bid costing approximately \$40m, as the winning tender was only selected once contracts were ready to sign.
- Governments often announce projects then stop them, or do not adhere to originally announced project timetables, which greatly increases bid costs, or sees poorly prepared bids.

- Approval processes, including planning and environmental, can often be streamlined or provided in a better coordinated way.
- It would also help to standardise bid documentation and processes across governments provided agreement does not settle on lowest common denominator outcomes.
- Probity requirements can be reconsidered as the pendulum has on many occasions swung too far. The main example would be to ensure there are continuing discussions between government and bidders to clarify issues and assessment criteria and better allocate risks. One international bidder left Australia saying "... it is the first time I have spent \$20m on a bid and never spoken to the client."
- Of most direct relevance to private financing, there should be no steps taken to make projects artificially more attractive (such as alternate road closures) so to maximise up front contributions from bidders, such as with Sydney's Cross City Tunnel.

All of the above are important steps that will improve project delivery efficiency, probably significantly. They are all issues on which Infrastructure Australia could further advise. They will not, however, change the overall balance of private finance's role in infrastructure funding. That requires us to debate some larger topics.

2.4.2 Settling the most appropriate private sector financing model

Private ownership of roads and other types of PPPs is relatively new. The model is not yet mature.

There are currently two important debates running in Australia, one relatively easy to address, the other complex.

The relatively easy issue to address is whether we should change the PPP model to de-risk projects we tender for PPPs. In the case of roads do we go to the "availability model", for example, where the private sector must simply make a road available, and not be subject to traffic risk?

There seems little merit in this model. Such a model seems not materially different from a design, construct and maintain (DC&M) contract with public financing. The only difference is private ownership. There would seem insufficient risk allocation to the private sector to justify the private sector financing cost premium.

The bigger debate is the role of the private sector in such projects. There seem at least two schools of thought.

One school argues the Government is the natural developer of roads in particular, and the natural owner of traffic risk. Governments should, it is argued, finance the roads, offer a DC&M contract to the private sector to build it, then impose a toll (when appropriate) and, when the project is de-risked (i.e. traffic numbers are known), the government should sell the road to superannuation funds who are, it is argued, the natural owner of such long lived and modest return projects.

Such a model, it is said, avoids the "unnecessary" intermediate merchant banking role where large fees are paid to highly gear a project and then on-sell it later to the superannuation funds. It avoids the high fees and the need for a complex and rigid initial development contract to define and allocate the initial risks.

The other school argues that the preferable toll road model is for initial private sector ownership with the private sector taking and managing traffic risk as has recently been applied. While both models see the road off the government's balance sheet, and therefore not a draw on current taxpayers, it is argued that this PPP model:

- Forces better upfront project specification
- Is a more effective way of transferring the lifecycle construction and maintenance risk
- Most important, the private developer's commercial focus facilitates greater innovation such as in the initial design (e.g. more on and off ramps) and in tolling.

Advocates of this model might have different views on whether the natural developer of the project is a merchant bank, a construction company or a focussed toll road operator. In many ways an immature market is still trying to determine this. The key argument here is that the private sector, and not the government, should develop the road.

Proponents of this model recognise that it is currently difficult to raise the debt component of PPP financing. They argue that this difficulty will pass with time, and that in the meantime there are ways to overcome these temporary problems. For example, with Victoria's \$3 billion desalination plant the Victorian Government underwrote the ability to rollover a significant amount of short term debt. Another approach is for governments to underwrite a minimal level of traffic, sufficient to raise debt but not enough to provide a return to the equity holders who therefore take the traffic risk above this minimal level.

While this is a complex issue the arguments in favour of PPPs or private sector development appear much stronger. Infrastructure Australia could be asked by the Commonwealth to assess these arguments further.

2.4.3 Flexibility in toll road charging

There may be more governments can do to justify toll roads, whether developed by the public or private sectors. This involves more flexibility on user charging.

We will argue in later chapters on the need for congestion (time-of-use) pricing in urban areas, and to charge trucks appropriately for their road use. These are difficult issues politically. In developing new toll roads, however, it may be politically easier to take such steps. Currently there is no time-of-use pricing for new toll roads, nor any assessment of the cost of the new road attributable to trucks and cars. Indeed, often trucks and cars pay similar levels of charges when their effect on road construction (e.g. road usage, pavement depth) may well be very different.

Apart from such cost issues, there may be key link roads where agreement could be reached to have trucks pay a large multiple of what cars pay because of the benefit of reduced truck journey time. In this way a new road could be justified and financed where it otherwise may not be.

Infrastructure Australia could assess these suggestions and advise COAG on their relative attractiveness.

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The current prominence of infrastructure in Australia presents an opportunity to address some governance issues. We should use this opportunity to consolidate the roles of COAG and Infrastructure Australia, and to settle how private financing can be used to help meet Australia's infrastructure needs.

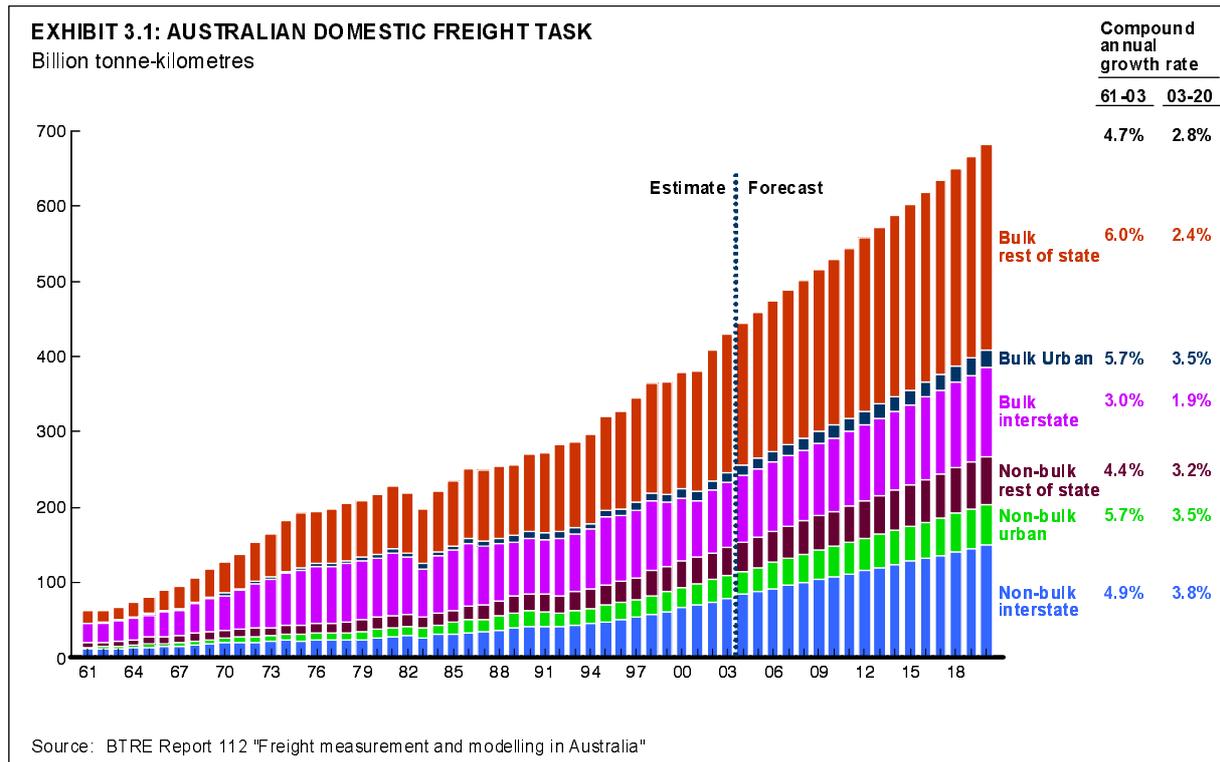
CHAPTER 3

MOVING OUR FREIGHT EFFICIENTLY AND EFFECTIVELY

Chapter 3: Moving our freight efficiently and effectively

3.1 Introduction and overview

Australia's freight task has more than doubled over the last 20 years, reaching 430 billion tonne-kilometres in 2003¹⁰. The freight task is forecast to almost double again by 2020 to 682 billion tonne-kilometres by 2020 (see Exhibit 3.1). The size and growth of the task highlights the importance of an adequate and efficient freight network.



Despite this, however, our past reports have highlighted a range of longstanding problems with Australia's freight network. For example, our 2007 report stated that ... "The freight bottlenecks are obvious: queues of ships off our coal ports, inadequate general cargo port capacity (e.g. container storage at Port Botany) and water depth (for example, at the Port of Melbourne), inadequate roads (for example, the Pacific Highway), under investment in rail lines, pressures at many of our intermodal (rail/road) hubs and poor access to ports for heavy vehicles."¹¹

In its December 2008 Report to COAG, Infrastructure Australia reinforced many of our criticisms of Australia's freight policy and planning. Indeed, Infrastructure Australia said that "the markets in which road, rail and shipping operate are distorted by prices that do not fully reflect costs, inconsistent regulatory regimes and tax and other incentives that compromise transport policy objectives".

¹⁰ *Freight Measurement and Modelling in Australia*, Report 112, Bureau of Transport and Regional Economics, 2006.

¹¹ *Revitalising Infrastructure Reform*, p15, in Infrastructure Roadmap for Reform, Business Council of Australia, September 2007.

Infrastructure Australia identified problems in all areas: they identified the need for attention to planning, project approval processes, supply chain coordination and the provision, pricing and regulation of infrastructure. Infrastructure Australia has also proposed that a new National Freight Strategy be developed, as part of an Integrated National Transport Plan.

Finally, Infrastructure Australia noted that the national reform program agreed to by COAG is incomplete, and that COAG's agreed regulatory reform program is behind schedule.

This chapter describes some of the key drivers of our freight problems that we and the Business Council of Australia have now been raising for many years, outlines some recent and important progress, and then proposes a way forward, as follows:

- Australia's freight transport sector faces problems of poor planning, regulation, pricing, funding and a number of specific market and government failures
- There has been recent progress not so much in actions but in advancing ideas as to how the problems can be addressed
- The way forward is a National Freight Implementation Plan that addresses both funding and, most important, policy issues.

Each of these points is summarised in Exhibit 3.2, and shall now be addressed in turn.

EXHIBIT 3.2: FREIGHT TRANSPORT REFORM OVERVIEW		
Long described problems	Recent decisions, reports	Proposed way forward
<ul style="list-style-type: none"> • Poor planning, some historical underfunding <ul style="list-style-type: none"> – Especially to complete value chain links • Inconsistent state transport regulations <ul style="list-style-type: none"> – Raising costs, causing inefficiency • Inappropriate user charges <ul style="list-style-type: none"> – Providing poor usage signals • Road user charges not linked to road providers <ul style="list-style-type: none"> – Users pay for what is spent but projects must battle budget guidelines without recognition of user funding • We have many particular market/government failures <ul style="list-style-type: none"> – e.g. Port Waratah 	<ul style="list-style-type: none"> • Infrastructure Australia has highlighted most of these problems • The Productivity Commission and the Henry Tax Review have highlighted the inappropriate road user charges, the lack of a link to road provision • The AusLink corridor studies and the work of Infrastructure Australia have identified many key priority projects • COAG has agreed to: <ul style="list-style-type: none"> – Begin to implement new road charging mechanisms leading to mass distance charging – Uniform transport regulation, but not until 2013 	<ul style="list-style-type: none"> • COAG develop within a year a National Freight Implementation Plan to chart the way forward drawing on the Commonwealth Treasury, Infrastructure Australia and NTC as appropriate to: <ul style="list-style-type: none"> – Develop a rolling freight project pipeline targeted to address particular freight bottlenecks – Accelerate mass distance and locational pricing and uniform regulation reforms – Settle the institutional arrangements to link road spending and revenue – Set target service levels that the Plan aims to achieve in terms of travel times, reliability, efficiency

3.2 Australia's freight transport sector faces many problems

While perhaps well known, it is useful to summarise these problems, and to outline some recent commentary on them. In doing this we will draw on recent reports from and statements by Infrastructure Australia, the National Transport Commission, the Productivity Commission and the Commonwealth Minister for Infrastructure. It is pleasing that many entities with the power to address these longstanding problems are now openly identifying the severity of them.

3.2.1 Poor planning and historical underfunding

Poor planning has driven many of our problems. For example, Infrastructure Australia has stated that end-to-end supply chain solutions are rare, and they give the example of recent growth in demand at many of Australia's ports which is placing strain on landside road and rail capacity and supply chain links from the ports.

In a similar vein in August 2009 the Commonwealth Minister for Infrastructure stated that ... "The consequences of the former Government's Auslink program funding road and rail only to the outskirts of cities, but not to our ports were negative for regional Australia's economy, added to urban congestion, and restricted productivity."¹²

Planning deficiencies mean that in many cases capacity building has been delayed until it is critical. Many projects have long lead times, and this delay means capacity is not in place when it is needed. A report prepared by Access Economics for the Minerals Council of Australia released in May 2008¹³ indicated that Australia lost mineral market share between 2002 and 2007, equivalent to 1.6% of national income, or \$17 billion at current prices, due to supply infrastructure being not able to keep up with demand.

The most visible examples of poor planning leading to delayed infrastructure investment are the delays in upgrading the Pacific Highway, the missing north and south rail links from coal fields to ports in Queensland, and the rail line from Acacia Ridge to the Port of Brisbane. Less visible is the limited intermodal capacity in many of our cities.

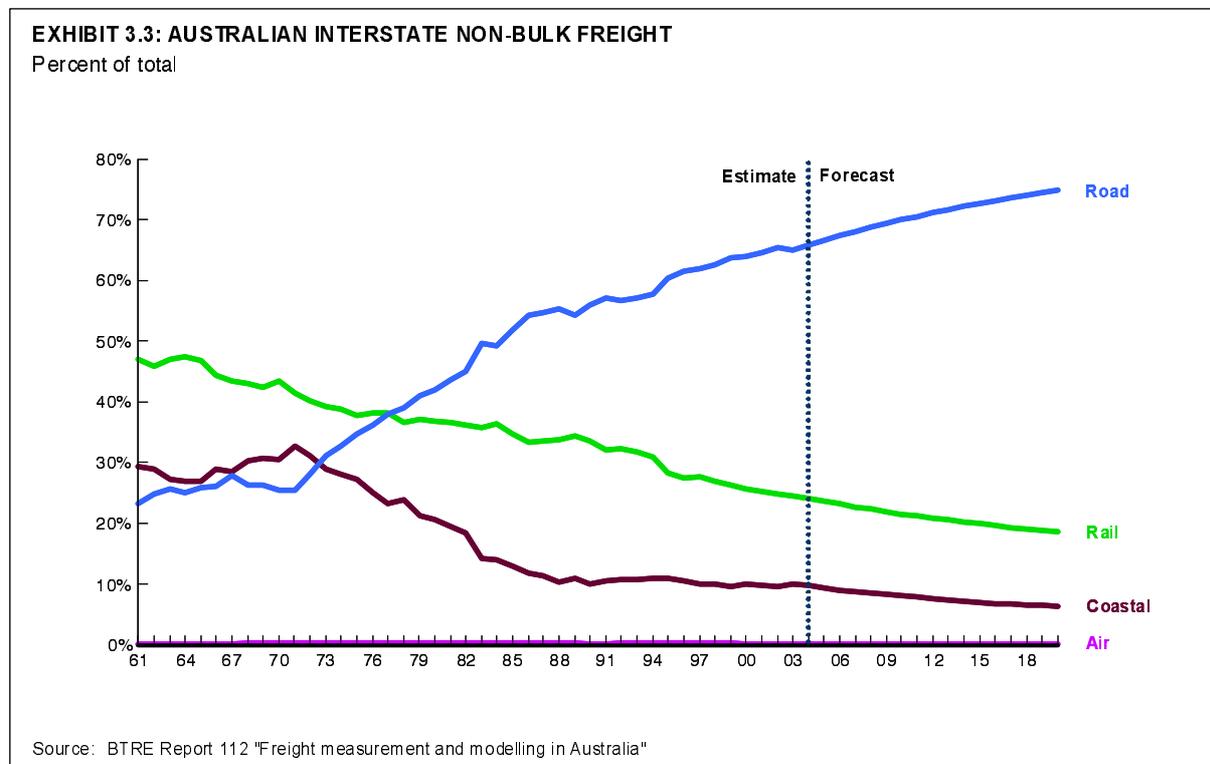
The National Transport Commission (NTC) released its Rail Freight Productivity Review in August 2009. As part of that review they commented that "more coordinated planning across transport modes can improve outcomes for the transport sector as a whole and ensure transport users are able to make accurate decisions regarding the most efficient transport mode". The NTC identified a number of productivity barriers in the area of policy, planning and investment, including:

- A lack of clarity regarding the roles and objectives of governments and government corporations
- Government subsidies are not provided as part of a transparent or consistent framework.

¹² *Building 21st Century Cities*, Anthony Albanese, Address to Partnerships 09 – Infrastructure and Investment Conference, 7 August 2009.

¹³ *Infrastructure 2020 – Can the domestic supply chain match global demand?*, Report by Access Economics Pty Ltd for the Minerals Council of Australia, May 2008.

The historical underfunding of rail has also been an underlying cause of problems in freight transport. As we have shown elsewhere¹⁴, this underfunding has led to poor reliability and slow travel times, which have contributed to rail's sharp decline in market share in, for example, interstate non-bulk freight (see Exhibit 3.3). Rail is predicted to decline to around 18% of interstate non-bulk freight by 2020.



3.2.2 Inconsistent state transport regulations

In its December 2008 Report to COAG Infrastructure Australia commented on the lack of uniformity in regulations for land transport across the nation. They went on to say that separate rail safety regulators and communications systems in each state in some cases drive up costs, create inefficiencies and cause confusion, and that national transport companies therefore carry unnecessary overheads associated with these different licensing, safety and communications regulations.

In a speech given in September 2008, the Minister for Infrastructure, Anthony Albanese also highlighted the increased costs associated with inconsistent regulation, and gave some key examples of the areas where reform is needed, including:

“Australia has seven rail safety regulators, three rail safety investigators and different rules in every state. It is extraordinary that in the 21st century, trains are required to change their staffing ratios as they cross borders. There are more than 50 pieces of legislation and subordinate legislative instruments pertaining to maritime safety along with eight independent maritime safety agencies”.

¹⁴ *The Future for Freight*, Port Jackson Partners Limited, Australasian Railways Association Inc., 2005.

3.2.3 Inappropriate road user charges

Existing road related payments in Australia are in general in the form of fixed registration costs, and distance-based fuel excise charges. Fuel excise is seen as an efficient way of raising tax revenue, as fuel consumption generally has inelastic demand, and there are low collection costs associated with it. The problem with using fuel excise as a proxy for charging for congestion and road damage costs, however, is that these costs depend in general more on the type of vehicle and when and where it is driven rather than purely on how far it travels and its fuel consumption¹⁵.

A key problem with road related payments in Australia is the disconnect between the payments and the costs caused by road use, between the revenues raised and the provision of road infrastructure, and between the levels of government that pay for and provide the roads.

In its report on Road and Rail Freight Infrastructure Pricing in 2006, the Productivity Commission found that efficient freight infrastructure is of particular importance to Australia given its dispersed population and production centres, but that “current pricing and regulatory arrangements are hampering the efficient provision and productive use of road and rail infrastructure”¹⁶.

The Productivity Commission found that the main efficiency losses with current road charging arrangements are due to the averaging of costs and charges under the current PAYGO road charging framework and the disconnect between road revenue and spending decisions. The averaging of the costs blurs the price signals, and leads to cross-subsidies from operators carrying light loads to those carrying heavy loads, and from users of lower-cost roads to users of high-cost roads.

The Productivity Commission concluded that the current charging and provision mechanisms for road charging have some major shortcomings:

- Network average charges under PAYGO convey negligible signals to road users about the costs of using particular roads, or to infrastructure providers about the demand for different roads
- The ‘disconnect’ between road charges and future road spending can lead to inefficient decisions, including holding back efficient road projects
- Charges for road use are essentially politically determined, requiring ‘sign-off’ by nine Ministers. They describe this as a cumbersome and highly political process, and also one which encourages lobbying to influence outcomes.

The Productivity Commission recommended three phases of policy reform. Phase 1 involves:

- Improvements to the PAYGO system, including a new determination to address the emerging under-recovery of total heavy vehicle road costs
- Improved regulation of heavy vehicles to yield productivity gains

¹⁵ *A Conceptual Framework for the Review of Taxes Related to Roads and Transport*, prepared for the Henry Tax Review, Harry Clarke and David Prentice, June 2009.

¹⁶ *Road and Rail Freight Infrastructure Pricing*, Inquiry Report number 41, Productivity Commission, December 2006.

- Improved investment decision processes, with the potential for large efficiency gains from consistent application of the AusLink principles across jurisdictions.

The Productivity Commission has estimated that the productivity gains from the proposed reforms could see a 5% productivity improvement in the road freight transport sector, which could increase GDP by around \$2.4 billion per annum.

The second phase of reform recommended by the Productivity Commission involves introducing voluntary incremental pricing to allow high mass trucks to use parts of the network they are currently excluded from. They also recommend institutional reforms to help connect revenues and spending decisions, and reduce political influence. The aim of these improvements is to ensure that road user charges and spending decisions are efficiently determined.

The third phase involves wider location-based pricing. They suggest that direct user pricing of major freight routes would allow for commercially-oriented road management.

In order to implement incremental pricing and full mass-distance-location charging it is necessary to use new technologies which are now becoming available including GPS technology currently being used by trucking companies anyway, and vehicle telematic technologies. Vehicle telematic technologies are based on GPS principles and would allow road managers to price road use on the basis of the time of a journey, the distance travelled, the type of road used and the loaded 'axle-load' weight¹⁷.

In its Rail Freight Productivity Review released in August 2009 the National Transport Commission noted that distortions exist between road and rail pricing. They said that some truck movements on regional roads are cross-subsidised by trucks operating on urban or arterial roads. They suggest this is because road infrastructure charging for heavy vehicles does not reflect the actual cost of maintaining and upgrading different parts of the road network or the nature of road use.

3.2.4 Road user charges not linked to road providers

The broader problem in road charging and funding is that the road user charges are not given to the road provider to maintain and upgrade the roads. The Productivity Commission has noted that "road pricing policies will be more likely to achieve efficient outcomes... when there is an explicit link between road-user prices, revenues received and decisions about future road expenditures"¹⁸.

This disconnect between road charging and funding means that road providers have no reliable, long-term source of funds. They must instead make a year-by-year case for budget funding, and compete against all other calls on funding, which does not allow for efficient long-term planning. That is, while road users pay road user charges according to what is spent on roads, what is spent is a function of a budget process that takes no account of the fact that road users will reimburse the governments for the expenditure being considered.

¹⁷ *A Conceptual Framework for the Review of Taxes Related to Roads and Transport*, prepared for the Henry Tax Review, Harry Clarke and David Prentice, June 2009.

¹⁸ *Road and Rail Freight Infrastructure Pricing*, Inquiry Report number 41, Productivity Commission, December 2006.

This disconnect also means that there is no link between what drivers pay for using certain roads and the quality of those roads. This means that road providers have poor accountability, and can always blame poor road condition on a lack of funding. The disconnect also means that road users don't get price signals about the cost of allowing them access to specific roads. An example of this is large grain trucks using rural roads not designed for the purpose.

Road user related revenues are currently treated as general revenues by the Commonwealth and most States and Territories. There are a few exceptions to this, for example NSW, where all road-user related fees are hypothecated into the RTA Fund and spent at their discretion.

The Productivity Commission¹⁹ suggested that options for institutional change in road funding include a departmental model, with hypothecation of road revenue, a dedicated road fund, a public utility model and a privatised model. Each of these options would involve a greater reliance on market mechanisms to guide road use and investment decisions, rather the current system based on political control.

The Productivity Commission found that the public utility model is most likely to produce the desired efficiencies and innovation in the provision of infrastructure services. The public utility model would ideally be implemented in conjunction with cost-effective, location-based pricing. Their comments on the other models include:

- “Hypothecation of revenues from road charges and taxes can yield benefits, but these are unlikely to be realised within the existing departmental model for funding road expenditures”
- “Compared with current arrangements, a road fund model would facilitate more efficient and less politicised decision making, funding and provision of road infrastructure... however, to be effective, a road fund needs to have a dedicated source of funds, a significant degree of autonomy and transparent process for allocating funds. Implementing this model in Australia would pose a number of challenges”
- “The private ownership and provision of roads on a network-wide basis is currently neither feasible nor desirable.”

A paper called “A conceptual framework for the reform of taxes related to roads and transport” by Clarke and Prentice commissioned by the Henry Tax Review was released in August 2009. In it Clarke and Prentice comment that “hypothecation arguments are unpopular among economists, but there are good reasons for considering them here”. They comment that road supply decisions should reflect road demands and that actual or forecast road user charges can provide useful signals that guide how roads should be built, upgraded, expanded and maintained. They further comment that the difficulty is not so much to devise an effective system of charging but to come up with appropriate institutions to forecast and respond to such signals.

3.2.5 Other market and government failures

In addition to all of the above, there are many specific examples of market failure or government failure which can illustrate the problems in getting appropriate freight infrastructure in place in a timely way.

¹⁹ *Road and Rail Freight Infrastructure Pricing*, Inquiry Report number 41, Productivity Commission, December 2006.

The Port Waratah coal terminal in NSW is a ‘common user facility’, which means that there are significant constraints imposed on the operator’s ability to enter into contractual arrangements with shippers. These common user provisions are an artefact from a time when the terminal was not operating at capacity, and it was seen as appropriate that all potential users could use the terminal on a first-come-first-served basis. The Port is now capacity constrained, and the common user provisions mean that the port operators are unable to sign any long-term contracts with coal producers. This lack of long-term contracts means that the port operators have no demand certainty, and have therefore found it difficult to get finance to fund the expansion of the port.

In Queensland there is a coordination problem with getting the so-called Northern and Southern “Missing Links” funded and implemented. The Southern Missing Link refers to the fact that the Surat Basin is not linked by rail to any of the ports of Gladstone. This means that it is not possible to develop any of the thermal coal deposits in that area other than for domestic power station use.

The Northern Missing Link refers to a 70km stretch of railway which would link the existing Goonyella Rail System to the rail line from Newlands to the coal terminal at Abbott Point. The Goonyella Rail System is congested, and one way to reduce congestion would be to build the Northern Missing Link from North Goonyella to Newlands, which would allow coal to be transported to the coal terminal at Abbott Point. If this were to occur, however, the coal terminal at Abbott Point would also need upgrading, in order to manage the increased volume. Contracts for expanding the Abbott Point coal terminal are conditional on the Northern Missing Link. In order to put in the Northern Missing Link Queensland Rail needs take-or-pay contracts for rail use.

3.3 There has been recent progress in advancing ideas as to how the problems can be addressed

The reports and papers referred to in the previous sections indicate growing awareness by government agencies of the problems in and solutions for Australia’s freight sector. This is a pleasing consensus about the need for change. There has also been some recognition of these solutions and some progress within the Commonwealth and State group of transport Ministers (the ATC) and COAG.

In April 2007 COAG agreed in principle to a three-phase Road Reform Plan in response to the Productivity Commission Inquiry referred to above. The Road Reform Plan involves:

- A new heavy vehicle charging determination to remove cross subsidies between vehicle classes;
- Incremental pricing – under this scheme, approved vehicles would be able to carry additional mass and pay a charge to offset the additional road wear costs. Future work on this reform will be undertaken as part of an investigation into mass-distance-location pricing; and
- Mass-distance-location pricing – under this scheme, should it prove feasible, all heavy vehicles would be charged based on their actual mass, distance travelled and location. Road spending would also be better linked to revenue from charges so that road spending could be directed to the roads used by heavy vehicles.

At the February 2008 meeting of the ATC the Council endorsed the NTC's recommendations on the establishment of a new heavy vehicle charging regime. The charges will implement COAG's request to recover fully the cost of provision of the road network to the heavy vehicle industry. They agreed that the increases in registration charges will be phased in over a three year period to enable the trucking industry time to adjust to the increases.

In May 2008 the ATC agreed that a new National Transport Policy would be guided by the agreed national vision, objectives and principles (see Exhibit 3.4). In July 2008 the Transport Ministers agreed to pursue priority national reforms, including:

- A National Road Safety Council (advising the ATC)
- A single national system of heavy vehicle regulation, registration and driver licensing
- A single national system for maritime safety regulation
- A single national rail safety regulatory and investigation framework.

EXHIBIT 3.4: NATIONAL TRANSPORT POLICY FRAMEWORK	
Vision	Policy objectives:
<p>"Australia requires a safe, secure, efficient, reliable and integrated national transport system that supports and enhances our nation's economic development and social and environmental well-being"</p> <p>Guiding Principles:</p> <ul style="list-style-type: none"> • Infrastructure Pricing – Sending the appropriate signals to influence supply and demand for infrastructure • Competitive Markets – Establishing competitive markets wherever possible to minimise the need for regulation • Private Sector – Involve the private sector, where it is efficient to do so, in delivering outcomes • National Regulation – A national perspective should be adopted where regulation is required • National Markets – Encourage national markets where possible • Customer - Customer focussed. Equitable access for all users 	<ul style="list-style-type: none"> • Economic – To promote the efficient movement of people and goods in order to support sustainable economic development and prosperity • Safety – To provide a safe transport system that meets Australia's mobility, social and economic objectives with maximum safety for its user • Social – To promote social inclusion by connecting remote and disadvantaged communities and increasing accessibility to the transport network for all Australians • Environmental – Protect our environment and improve health by building and investing transport systems that minimise emissions and consumption of resources and energy • Integration – Promote effective and efficient integration and linkage of Australia's transport system with urban and regional planning at every level of government and with international transport systems • Transparency – Transparency in funding and charging to provide equitable access to the transport system, through clearly identified means where full cost recovery is not applied
<p>Source: National Transport Commission: National Transport Policy Framework October 2008</p>	

The COAG Reform Council (CRC) reported in March 2009 on the implementation of the national reform agenda. They reported that some progress has been made on transport pricing reforms, and that the implementation of the new heavy vehicle charges determination is a notable achievement, even if delayed. They noted that the legislation was amended to require further changes to road user charges to be made by way of a determination by the Minister for Transport, and that this determination is disallowable by parliament. The CRC is therefore concerned that the potential to achieve full cost recovery may be undermined if future determinations are disallowed.

The CRC also reported that progress on rail safety reform remains slow. The CRC commented that under the current approach taken by COAG a national rail access regime has not been achieved, and is not likely to be achieved for a significant period of time.

In May 2009 the ATC recommended that by 2013:

- The Australian Maritime Safety Authority would become the sole national regulator or all commercial vessels operating in Australian waters (Victoria only endorsed this for interstate maritime safety)
- A new national heavy vehicle regulator would become responsible for regulating all vehicles over 4.5 gross tonnes
- A national rail safety regulator would provide a one-stop shop for all those operating in and on our rail networks
- The Australian Transport Safety Bureau would become the preferred national rail safety incident investigator.

At the July 2009 COAG meeting it was agreed that the ATC's recommendations on national safety regulation would be implemented for maritime safety, rail safety and heavy vehicles, and that these reforms would be in place by 2013. A press release issued by the Prime Minister indicated that the proposed reforms have the potential to boost national income by as much as \$2.4 billion per year.

It is important to remember that single national regulators have been proposed numerous times before, and that they have not succeeded. In addition, a 2013 implementation date raises serious questions about the ATC's and COAG's commitment. In agreeing to a national regulator, there is also the risk that there will be "lowest common denominator" rules set by the regulator, or that there will be many exceptions to the rules built in on a state by state basis.

Infrastructure Australia recommended in its May 2009 report that an Integrated National Transport Plan be developed. Elements of this plan include:

- An integrated supply chain framework for bulk exports, currently being developed by the National Transport Commission
- A National Ports Strategy, which they have recommended be developed by Infrastructure Australia and the National Transport Commission
- A National Freight Strategy, but they have not specified who should develop this plan.

The AusLink process and funding model introduced by the previous Commonwealth Government has led to some pleasing progress in freight planning. Its key achievement is that the transport corridor studies, which cover all major freight routes in Australia, have been completed and agreed to by the Commonwealth and State Governments. The corridor studies describe the issues that need to be addressed in each corridor and make recommendations about the necessary investments.

In its Rail Freight Productivity Review of August 2009 the NTC recommended that they should work with state and federal governments, Infrastructure Australia and the Productivity Standing Sub-Committee to develop an improved national framework to overcome existing rail planning and investment deficiencies across Australia. They recommend that this work should build on existing work already undertaken through the National Transport Policy Framework agreed to by ATC, the AusLink Corridor strategies and by state and territory governments. They note, however, that this process will aim to build on rather than replace existing planning work undertaken.

3.4 A proposed way forward

Given all the above it now seems time for definitive action. All of the building blocks are there in these past reports and policy ideas, in the work on infrastructure priorities from Infrastructure Australia and from the Auslink corridor studies. These ideas will be further assisted when the Henry Tax Review reports shortly. It would be a shame if, after all this time and rhetoric, all we gained were more reports and high level strategies.

We propose, therefore, that COAG develop a National Freight Implementation Plan, drawing on the Commonwealth and State Treasuries, Infrastructure Australia and the National Transport Commission as appropriate. This plan should be completed within a year, given that it should be a first major instalment of a rolling plan, and should cover freight, ports and the supply chain. The plan should draw on the work already done and underway as outlined above.

Crucially, however, the plan must not just focus on the spending needs, but must focus on regulatory and policy issues, and outline clear target service levels to be achieved. It should, therefore, have the following components:

- A transparent four year rolling spending pipeline for roads, rail and ports in order to improve efficiency and decrease bottlenecks on our freight networks based on realistic freight needs scenarios. The pipeline should be based on cost-benefit analysis which is publicly released, and it should clarify the role of each tier of government in funding. It should draw on the work already done by Infrastructure Australia and the Auslink corridor studies but also tap the perspectives of the main freight customers.
- An accelerated timetable for the regulatory and pricing reform programs already endorsed in concept by COAG and the ATC so that we can make much better use of the roads we have. This should include:
 - An accelerated introduction of the mass-distance and location charging for trucks, starting initially with incremental pricing, and followed soon by full locational charging (which can use existing technology), as proposed under COAG's Road Reform Plan.
 - An accelerated timetable for the introduction of single national regulators so that they are in place by 2010. These regulators were agreed to by COAG in July 2009 and are the national safety regulators for heavy vehicles, maritime safety and rail safety. The current timetable of introduction by 2013 is too long for reforms that have been so long foreshadowed
- Recommendations on the appropriate institutional arrangements in order to link revenue to spending for roads. The recommended institutional arrangements should ensure national road spending is planned, charges are set to match the planned spending, and the revenue subsequently raised is then used to implement the plan. These institutional arrangements should be put in place to ensure clear accountabilities in the setting, collecting and spending of national road user charges. It is possible this will involve a regulated government business enterprise-type body, as recommended by the Productivity Commission. Setting up one body for national roads important for the freight market makes sense as in some cases they cross jurisdictional boundaries.

The recommendations should also cover the regulatory arrangements that should apply so that, for example, the body charged with providing and maintaining road infrastructure gets an appropriate return.

These recommended road funding arrangements will provide the charging “headroom” so that appropriate rail charging can be introduced to fund most investments by existing rail entities. There will, however, be a need for additional spending on rail projects in cities.

- Most important, the target service levels that the Plan aims to achieve in terms of travel times, reliability and efficiency for both trucks and trains, and a regular reporting schedule. We need to know that the spending and other measures are achieving clear objectives; without this, the Implementation Plan will fail.
- Recommendations on any other measures to improve the efficiency of the freight network (e.g. port operation rules).

As a linked but separate task we see a role for Infrastructure Australia to identify areas of market or regulatory failure that are currently not being addressed in a holistic way. An example of this could be facilitating a solution to the stand-off at Port Waratah or with the Northern and Southern Missing Links described above. It would be beneficial to have a single body looking at issues such as these, rather than each issue being looked at by a new State- or Commonwealth-based investigation

* * * *

We have the policy ideas formulated and the project assessments already well underway to inform a National Freight Implementation Plan to address the important project and policy bottlenecks. There is now a need for action to achieve the freight network Australia needs.

CHAPTER 4

ENSURING LOW AND STABLE LEVELS OF TRANSPORT CONGESTION IN OUR CITIES

Chapter 4: Ensuring low and stable levels of transport congestion in our cities

4.1 Introduction and overview

Urban transport problems affect not just the quality of life of our urban dwellers, but also Australia's productivity because of our high level of urbanisation. Rising congestion affects commuters, businesses, freight transport efficiency and costs, and the environment. There has been an increasing shift to public transport in many cities, but its quality, quantity and reliability has struggled to keep up.

We have written on these issues on many previous occasions (see our 2005²⁰ and 2007²¹ reports for the BCA in particular). We have been highlighting the need for improved transport planning, the introduction of congestion pricing, and greater investment in and measures to improve the efficiency of public transport.

There is now renewed hope that we can address these longstanding issues. While the States have increased their urban transport infrastructure spending recently, they are now facing budget difficulties. The important change is that the Commonwealth has now entered the urban transport policy arena in a significant way. Further, the Commonwealth Treasury and the Henry Tax Review are both focussing on congestion charging.

Given these steps it is now proposed that the Commonwealth Government work with the States to prepare integrated urban transport infrastructure plans that involve investment commitments and improved project assessments and, more important, policy changes to manage congestion and improve public transport efficiency.

This chapter covers:

- Worsening congestion on our urban roads and in our public transport
- The Commonwealth's current interest in urban transport issues
- Growing support for the introduction of congestion pricing
- Some recent perspectives on the quality of urban transport planning
- Weighing the role of the Commonwealth Government in urban transport issues
- A proposed way forward.

These issues are summarised in Exhibit 4.1, and are now addressed in turn.

²⁰ *Reforming and Restoring Australia's Infrastructure* in Infrastructure Action Plan for Future Prosperity, Business Council of Australia, March 2005.

²¹ *Revitalising Infrastructure Reform* in Infrastructure Roadmap for Reform, Business Council of Australia, September 2007.

EXHIBIT 4.1: URBAN TRANSPORT OVERVIEW		
Longstanding concerns	Recent developments	Proposed way forward
<ul style="list-style-type: none"> • Rising urban congestion in all our major cities <ul style="list-style-type: none"> – Seemingly on an unstoppable rising trend • Generally poor quality and inadequate public transport <ul style="list-style-type: none"> – Both new investment and improved efficiency is needed 	<ul style="list-style-type: none"> • Increased State spending on urban transport infrastructure, but may not be sustainable • The Commonwealth has now embraced a major role for itself in urban transport infrastructure and planning <ul style="list-style-type: none"> – \$4.6b funding to urban metro projects – Future priority projects identified • Commonwealth Infrastructure Minister says the “Commonwealth’s recent exile from the urban policy arena has ended” • Infrastructure Australia establishes Major Cities Unit “to identify opportunities where federal leadership can make a difference” • COAG establishes a Task Force to improve urban planning • Commonwealth Treasury and Henry Review both lending strong support to congestion pricing 	<ul style="list-style-type: none"> • The Commonwealth using Infrastructure Australia as appropriate work with relevant States to prepare integrated urban transport plans covering: <ul style="list-style-type: none"> – Improved transport planning to meet particular guidelines and transparent project assessment processes – Rolling pipeline of projects, meeting strict criteria – Active steps to reduce congestion on roads, including a clear path to congestion charging – Active steps to improve public transport including new investment and a clear path to improved efficiency – Clear target service levels

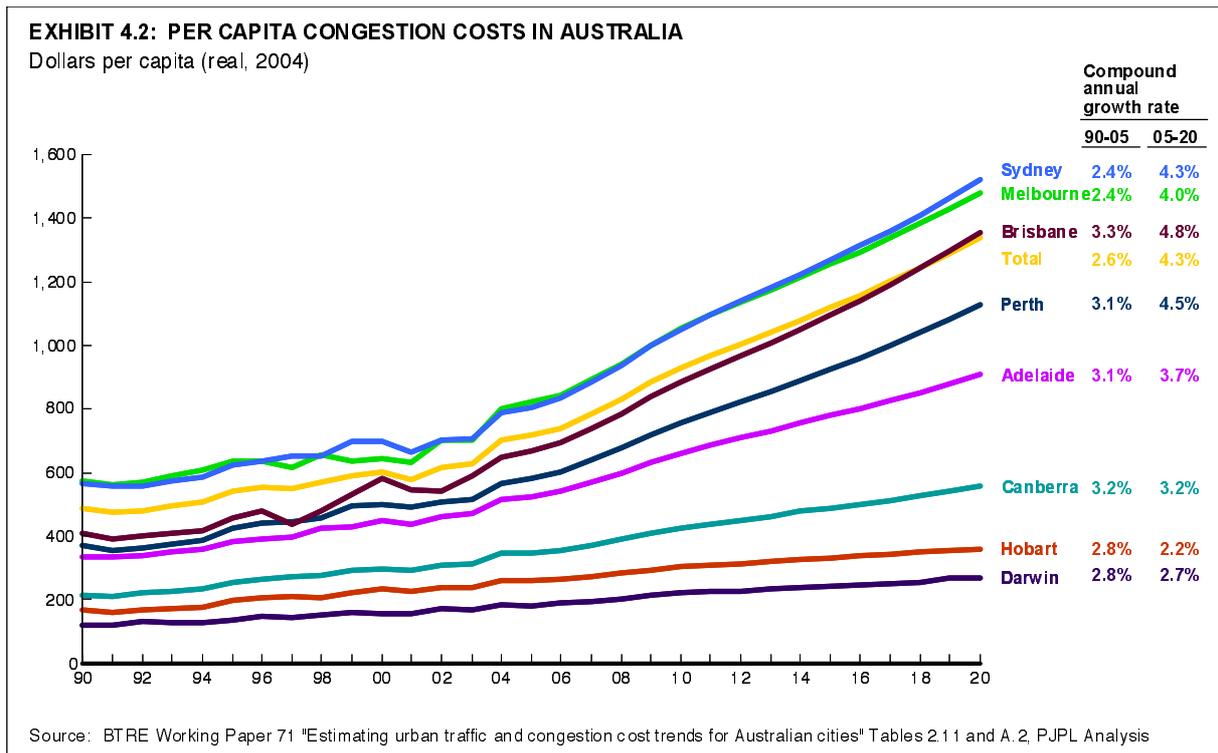
4.2 Worsening congestion on our urban roads and in our public transport

Australia continues to face increasing congestion on our roads, and a public transport system that, in terms of quality and supply, is not keeping up with demand. In a speech in August 2009 the Commonwealth Minister for Infrastructure said that “the need to pay attention to our cities is more urgent than ever”²².

As we have highlighted in our previous reports urban congestion costs on Australia’s roads are increasing, and of most concern, are forecast to continue to do so. The Bureau of Transport and Regional Economics (BTRE) published its latest estimates of avoidable urban congestion costs in 2007, and estimated that they were \$9.4 billion in 2005, and would rise to \$20.4 billion by 2020 in constant prices. Sydney and Melbourne have the highest per capita congestion costs, and Brisbane and Perth are forecast to have high growth in per capita congestion costs over that period (see Exhibit 4.2).

The avoidable congestion costs forecast by the BTRE are due to delay, trip variability, vehicle operating expenses and motor vehicle emissions (due to congestion) being above the economic optimum level for the relevant network. Of the total \$9.4 billion of avoidable congestion costs in 2005, \$3.5 billion is private time costs, \$3.6 billion is business time costs, \$1.2 billion is in extra vehicle operating costs and \$1.1 billion is in extra air pollution costs.

²² *Building 21st Century Cities*, Anthony Albanese, Address to Partnerships 09 – Infrastructure and Investment Conference, 7 August 2009.



Increasing urban congestion does not just affect commuters getting to work: it also hurts Australia's productivity. It has, for example, a significant impact on the costs of freight transport. The cost of pick-up and delivery within urban areas makes up close to half the total cost of rail freight. Improved access to ports and intermodal facilities in urban areas should allow this significant component of freight costs to be reduced.

Public transport systems in Australia have seen increasing demand and in many cases the supply of public transport has not kept up. In its 2008 Report to COAG, Infrastructure Australia commented on public transport use in Australia, saying there has been a "recent modal shift to public transport across Australia, variously attributed to rising CBD employment, traffic congestion, high petrol prices and environmental concerns". They also commented that "public transport systems are showing their own signs of congestion given the increasing demand across the country".

Infrastructure Australia reported that patronage on Australia's rail systems has increased considerably over the last few years. For example, on the Melbourne rail system patronage grew 39% in the three years to 2007-08. They further noted that trains in Sydney and Melbourne report severe overcrowding with people left standing on platforms. Operators are reportedly having difficulty in finding more train paths to add more services within existing timetable and network constraints.

Infrastructure Australia also commented that Australian cities have relied upon the investment in rail networks made in the early to mid twentieth century. They said that:

"Major new investment is now needed to sustain our cities over the next several decades and beyond. Increased network capacity is required to meet population-driven patronage growth and to provide the scope for significant mode shift from private vehicles to public transport."

4.3 The Commonwealth's current interest in urban transport issues

As outlined in Chapter 1, the States have increased their spending on urban transport infrastructure significantly, including on roads and public transport. It is also clear, however, that the States may not be able to maintain this level of infrastructure spending given their increasing budget constraints.

The most noticeable change in urban transport is that the Commonwealth Government has started to play an active role. As outlined in Chapter 1, the Commonwealth committed \$4.6 billion to urban metro projects. Infrastructure Australia foreshadowed this in its May 2009 National Infrastructure Priorities document when it commented that “the time has come for an unprecedented commitment to the creation of world-class public transport for our cities”, and recommended “for the first time in Australian history, significant Australian Government investment in public transport in our cities”.

Of the ten priority projects identified by Infrastructure Australia, five were for urban transport projects. All of these received at least some funding in the Commonwealth budget. Infrastructure Australia also identified nine priority pipeline projects under its ‘Transforming our Cities’ theme and three of them received at least a minimal level of funding. Six of the nine priority pipeline projects are public transport projects, two are urban road projects and one is an ‘efficiency project’, the Fully Controlled Motorways proposal from Queensland.

Even more significant, the Commonwealth is not just starting to fund urban transport projects, but is also getting involved in urban planning. The Infrastructure Minister said in an August 2009 speech²³ that Australia needs a policy framework that will “assist the Commonwealth, the states and territories and local governments to create productive, liveable and sustainable cities”. He went on to say that success in this area will involve “overcoming reluctance to accept Commonwealth involvement” and that the big problem is the lack of a consistent national policy focus. He announced that the “Commonwealth’s recent exile from the urban policy arena has ended”.

Infrastructure Australia’s Major Cities Unit was established “to identify opportunities where federal leadership can make a difference to the prosperity of our cities and the wellbeing of their residents”. It has three objectives:

- Productivity: reducing urban congestion and improving our freight networks so that people and goods can move more efficiently
- Sustainability: ensuring that planning assists in the critical task of reducing carbon pollution and securing our water supply
- Liveability: linked to the first two objectives but noting that community participation and access to services is critical.

Increasing the Commonwealth Government’s profile further in this area, Infrastructure Australia sees itself as leading the development of a National Urban Policy via the Major Cities Unit. The Minister for Infrastructure said in August 2009 that targeted consultations for developing the National Urban Policy were already underway, and that it was expected that the main content of the policy would be developed in the coming year.

²³ *Building 21st Century Cities*, Anthony Albanese, Address to Partnerships 09 – Infrastructure and Investment Conference, 7 August 2009.

COAG's role in urban transport planning

COAG also started a reform initiative on major city and transport planning in February 2009. In April 2009 COAG announced the formation of a new Taskforce to identify areas where metropolitan planning can better complement state and national infrastructure planning. Infrastructure Australia has said it will work with the Taskforce to achieve integrated planning outcomes.

COAG's Communiqué from its April 2009 meeting stated that the work of the Taskforce will recognise that:

- The States have clear responsibility for land-use planning within their jurisdictions
- The Commonwealth has an interest in the efficient operation of national infrastructure
- Efficient infrastructure and improving our cities requires the better integration in jurisdictions of major city land-use planning with state and national transport, energy, water and social infrastructure investment plans.

The Taskforce will report to COAG by the end of 2009. The Commonwealth has said that it hopes the Taskforce's work will encourage each jurisdiction to put in place, by the end of June 2010, "best practice major strategic corridor and metropolitan planning arrangements that will ensure consistent strategic decision-making, improve the efficiency of infrastructure investment and further contribute to productivity and economic growth".

It is not clear what, if any overlap and coordination there is between the above processes. It would be desirable for the role of the Major Cities Unit to be clarified, and the links, if any, to COAG's Taskforce to be made explicit.

4.4 Growing support for the introduction of congestion pricing

There has been little substantive progress on managing urban congestion since our earlier reviews. With the exception of the time-of-day tolling introduced on the Sydney Harbour Bridge in January 2009, and various parking levy schemes in CBDs, there has been no progress on implementing congestion pricing.

Time-of-day tolling was introduced for the Sydney Harbour Bridge and Tunnel in January 2009. The toll was increased for south-bound traffic from \$3 to \$4 between 6:30-9:30am and 4:00-7:00pm, and was reduced from \$3 to \$2.50 between 7:00pm and 6:30am on weekdays and between 8:00pm and 8:00am on weekends. There is some indication that Harbour crossings have reduced during the increased tolling period.

As we outlined in 'Infrastructure: roadmap for reform' in 2007, the most encouraging recent policy development was that COAG called for a review of urban congestion trends, impacts and solutions from Commonwealth and state officials. This review reported in December 2006, and this was the first time that urban congestion concerns were recognised as a national issue. The review found "... that congestion pricing measures stand out as the most effective option for alleviating congestion and improving the efficiency and productivity of the transport network (at least when delivered as part of a total package of complementary

measures)”²⁴. COAG’s response to this work was to leave decisions to each jurisdiction. That is, there was to be no collective COAG follow-up.

As a result of the Urban Congestion Review, however, COAG tasked the Australian Transport Council (ATC) with improving the urban congestion data, modelling and performance information available for decision making.

As part of developing a National Transport Policy the ATC established nine working groups, including one on urban congestion, which Victoria took responsibility for. Some of the key lessons which the Working Group took from its case studies are that:

- Interventions that are integrated across relevant transport modes, rather than operated independently, tend to be more attractive to users and also deliver better outcomes
- Aligning relevant policies and operational procedures within and across levels of government will further deliver better outcomes from congestion interventions
- Significant improvements in long-term congestion management may be achieved by integrating supply- and demand-side measures.

There has recently been renewed focus by the Commonwealth on congestion pricing as a means of managing urban congestion. A Commonwealth Treasury officer, Paul Hubbard, recently wrote a paper titled “Urban Congestion – why ‘free’ roads are costly”. He states that traffic jams should not be seen “as an inescapable fact of city life ... Most roads are nominally ‘free’ to drive on, resulting in demand for many roads that exceed capacity at relatively predictable times. This means that motorists do in fact pay – in wasted time ... harming productivity and growth ...”

Mr Hubbard concludes that “the net benefits of road congestion charging in major Australian cities may be considerable, but so are the challenges”. He notes that these challenges “... suggest attempts at further coordination by all levels of government may be worthwhile”.

Another paper called “A conceptual framework for the reform of taxes related to roads and transport” by Clarke and Prentice, commissioned by the Henry Tax Review, was released in August 2009. It notes that there is practically no experience with congestion-based pricing in Australia and only rudimentary modelling of costs. It also notes that except for the Sydney Harbour Bridge time-of-day tolling, road pricing in Australia is geared towards cost recovery, and does not help with congestion management.

It comments that congestion pricing should be considered immediately for Sydney and Melbourne. They suggest that the most frequently advocated congestion pricing solutions for Australia will involve cordon pricing (as you cross a boundary) for some major cities as well as pricing of major arterials and ring roads. They say that while per kilometre congestion costs are high in Brisbane, Perth and Adelaide, their aggregate costs are not that high, and so they are not yet suitable for congestion pricing, given the implementation costs likely to be involved. They also identify parking policies as providing a useful though imperfect policy approach which can be used to reduce congestion.

²⁴ *Review of urban congestion trends, impacts and solutions*, Report prepared for the Council of Australian Governments by the Competition and Regulation Working Group, December 2006.

4.5 Some recent perspectives on the quality of urban transport planning

The quality of urban transport planning undertaken by the States is of varying quality. In the recent Commonwealth budget, 70% of the \$4.6 billion allocated to metro rail projects went to one project in Victoria. NSW received just \$91m for preliminary planning work for the Sydney West Metro. It is well known that the Commonwealth was surprised and disappointed with the quality of most of the urban transport plans and project assessments that were submitted to Infrastructure Australia.

A report prepared by the Queensland Auditor-General in June 2009, and subsequently tabled in the Queensland Parliament, was damning about that State's plans to address urban congestion. The Auditor General identified a number of key areas of concern, for example:

- The leadership at the state level for managing the transport network and urban congestion is not coordinated effectively and this makes it more difficult for government agencies to drive a strategic response in an integrated and coordinated manner.
- Due to a systemic weakness in integrated planning across entities, there is no certainty that the agreed responses will achieve the optimal mix between the different elements of an urban transport network, such as land use, transport infrastructure, demand management and intermodal options.
- The continued use of out of date key transport documents and plans may result in decisions that are based on obsolete data and assumptions and not effectively address the current challenges.

The Auditor-General also commented that “State agencies have not developed a clear definition of congestion as the issue being addressed nor have they defined the specific outcomes at the strategic level to be achieved through the list of initiatives.”

The Auditor-General also stated that “Inadequate strategic planning in the past has consequences that are evidenced by the current flurry of activity ... the approval of this major spending program based on immature plans does not provide comfort that the expenditure will address urban congestion in an effective manner.”

4.6 Weighing the role of the Commonwealth Government in urban transport issues

There is a threshold question about whether or not the Commonwealth should be involved in urban transport planning. Many will argue that having the Commonwealth involved in transport planning for Australia's major cities just adds another layer of bureaucracy, and confuses accountability. There are, however, four reasons why there is a role for the Commonwealth in transport planning for Australia's urban centres.

- First, the Commonwealth has already established a major role for itself. It has commented on the need for better urban transport planning and it has started funding urban transport infrastructure directly for the first time.
- Second, many urban transport priorities are of national significance, over and above local importance. Examples include roads to ports, freight paths which currently enter urban centres, and urban intermodal hubs. In addition, given Australia's high level of urbanisation, well-functioning cities have wider benefits.

- Third, the Commonwealth has a greater ability to raise taxes than the States. It is not clear that the Commonwealth should only fund national and rural roads when it has more money at its disposal than the States.
- Fourth, and most important, having the Commonwealth involved can help the States introduce policies such as congestion pricing, and changes to improve public transport operational efficiency, which might otherwise be hard to implement by one State government alone. As was seen with the National Competition Policy payments, it is easier to implement unpopular reforms if there are payments (in this case, project funding) tied to the implementation.

It will be important, however, that the Commonwealth's role is well defined so that the States remain accountable overall for their capital cities. This should not be difficult, and could be assisted by some national principles for the Commonwealth's role that are endorsed by COAG.

4.7 A proposed way forward

It is proposed that the Commonwealth work with each State, possibly through the Major Cities Unit in Infrastructure Australia, to prepare an integrated transport plan for each major capital city. This plan should be based on agreed national principles and standards, it should outline future investments over a four year period (the government forward estimate period) by both the relevant State and the Commonwealth Government, it should outline clear policy changes to gain the best outcomes from this investment, and it should be aimed at achieving clear target service levels.

To begin this process it would be helpful for COAG to agree some national principles and standards for how these transport plans are to be completed. Not only could they define the Commonwealth's role, as just discussed, they could also identify the policy issues that need to be addressed and they could describe the required shape of the plans. For example, the plans could identify a long term and coherent view of how the city's transport future will unfold (10 year plus) and within this the key transport infrastructure priorities (5-10 years) and then within this the main specific project plans over, say, a five year period.

In relation to the investment commitments in the integrated urban transport plans by both the State and Commonwealth governments, they should (consistent with the thoughts in Chapter 1):

- Be part of a clear rolling four year pipeline of projects
- All projects should be subject to a public cost-benefit analysis, and a statement outlining how they fit into the wider transport plan.

At a minimum policy changes in at least two areas should be addressed:

- Active steps to introduce congestion pricing on our roads; we cannot simply spend our way to reduced congestion as there is ultimately limited access to central areas
- Active steps to improve public transport efficiency, including consideration of private operation of some public transport; we cannot keep to the current approach and expect improved results in, for example, the Sydney railways.

While the costs of implementing congestion pricing may not justify the benefits immediately in all cities, it will be important to continue to have a readily implementable plan to implement congestion pricing when appropriate.

It is necessary, however, to design congestion pricing carefully and in a way suited to where it is to be implemented. Road users require viable alternatives, particularly well-functioning public transport.

A fundamental part of the integrated plans should be defined target service levels and regular reporting of performance against them. We should no longer tolerate expenditure and policies which are implemented without clearly defined measures which allow us to track whether or not they are effective. Examples should include targets for road congestion levels, and targets for public transport reliability and crowding.

Indeed, as we have argued elsewhere²⁵, we should be pursuing policies that clearly target no further increases in per capita congestion costs on our roads and reduced congestion on our public transport at a minimum. If we do not plan for such outcomes they will never happen.

* * * *

With the Commonwealth's entry into urban issues and the current focus on congestion pricing we now have an opportunity to make a significant difference in our cities. We need to shine a spotlight now on outcomes, so that this opportunity is not lost.

²⁵ *Releasing the infrastructure handbrake*, Address to the Melbourne Institute and the Australian 2008 Economic and Social Outlook Conference, March 2008

CHAPTER 5

ENSURING CONTINUING SUFFICIENT SUPPLIES OF URBAN WATER

Chapter 5: Ensuring continuing sufficient supplies of urban water

5.1 Introduction and overview

Sufficient supplies of reliable water for our urban centres are clearly crucial for our quality of life and our economy. To make the best use of our available resources it is important that the lowest cost sources of water supply are used, that this water is priced appropriately to ensure additional supply increments are provided in a timely way, and that consumers can decide the level of water reliability they want to pay for, above an equitable minimum.

At the time our previous reviews were published in 2005²⁶ and 2006²⁷ essentially all Australia's major cities were facing water usage restrictions. So serious was the situation that these restrictions prompted some calls for curbs on economic growth so that Australia could live within a perceived given level of water supply.

At that time, however, there had been no major additions to our water supplies in our east coast capital cities for around 20 years, while urban populations had grown almost 30% on average, and up to 50% in Brisbane.

Our previous reviews, therefore, asserted that Australia's urban water 'scarcity' was created, not natural, as what else was to be expected when there has been no attempt to increase supply to match demand. While the created water scarcity was exacerbated by drought, all government and water authority efforts appeared to be mainly focussed on demand management, rather than increasing supply options.

It is worth repeating the key sentiments from our 2006 Report.

“Why do Australian consumers accept water restrictions when they would not tolerate restrictions in similar essential services such as electricity or gas? Australian consumers appear to have been educated to believe a myth: that water is in a state of permanent shortage rather than a resource that is poorly allocated and managed.”

“Instead, we are simply calling for Governments to let water markets work like they do for all other products, including for other essentials like electricity and food. Let prices settle where they will once consumers decide how much they wish to consume at prices that bring forward various increments of new supply.”

Since then our assertions have been very well justified. Each State has finally acted to boost its water supply to meet demand, which is extremely welcome.

There are problems, however, with the way the increase in water supply has been achieved. The supply additions that have been selected may or may not be the least cost options; decisions about new supply options have been made with often little public transparency, so it

²⁶ *Reforming and Restoring Australia's Infrastructure* in Infrastructure Action Plan for Future Prosperity, Business Council of Australia, March 2005.

²⁷ *Water Under Pressure: Australia's man-made water scarcity and how to fix it*, Business Council of Australia, September 2006.

is hard to know. We do know, however, that some good potential options for increased supply have been excluded from consideration, such as rural to urban water trading.

As we look to the future, it is important to ensure that the recent problems do not recur. Governments and water utilities should plan for further timely investment in new supply sources, rather than only reacting during times of crisis. Urban supply portfolios should consist of a mix of climate dependent and independent sources to minimise the risks associated with future droughts and climate change. This would be assisted by the establishment of an active and competitive market for urban water.

It is now proposed that a timetable be set for each State to implement the National Urban Water Planning Principles developed by COAG, that barriers to urban-rural water trading are removed, and that the Productivity Commission is asked to undertake a review on how best to implement urban water reform.

This chapter covers:

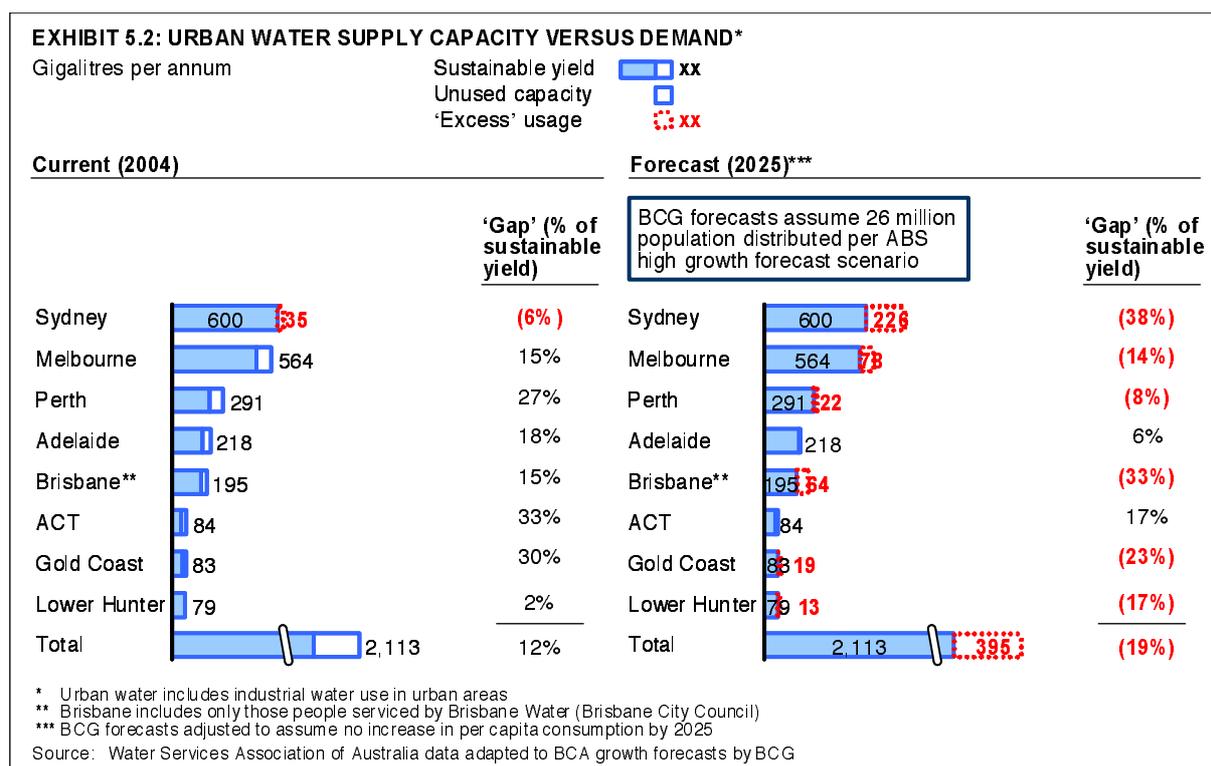
- Past supply shortages
- The recent large increase in investment and supply
- Some of the recent supply additions may not have been least cost
- Options for taking urban water reform further
- A proposed way forward.

These issues are summarised in Exhibit 5.1, and are now addressed in turn.

EXHIBIT 5.1: URBAN WATER OVERVIEW	
Observations	Proposed way forward
<ul style="list-style-type: none"> • States have finally acted to boost their water supplies so that the immediate water demand can be met, including with climate independent desalination • Some supply additions may not have been least cost • In particular, rural to urban trading was often ruled out • Still no moves to establish a well functioning urban water market to provide consumer choice, and reduce the chances of past problems re-emerging 	<ul style="list-style-type: none"> • A timetable should be set for each State to implement the National Urban Water Planning Principles. As part of this, each jurisdiction should publish and continually update a robust cost curve of all available supply options, and the results from scenario planning of demand and currently available supply • Barriers to urban-rural water trading should be removed • The Productivity Commission should undertake a comprehensive review of how best to implement urban water reform covering competition, trading, governance and pricing

5.2 Past supply shortages

In 2006 effectively all Australia's major cities had water usage restrictions in place and dams were at very low levels. Exhibit 5.2 shows that at that time most of Australia's cities were facing current or future supply shortages given population growth and with no new supply options planned. The Water Supply Association of Australia, the peak body of the urban water industry said at the time "...over the last 20 years, with the exception of Perth, no new water sources have been developed for our cities. At the same time, the urban population has increased dramatically"²⁸.



The water restrictions put in place in Australia's cities in order to manage demand focussed almost exclusively on regulation, and did not use price as a mechanism. Australia's water prices remain low by international standards despite some recent increases. Indeed, throughout Australia consumers still pay less than \$2 per thousand litres delivered 24/7.

It was even argued that Australia must slow population and economic growth to match available water. Former NSW Premier Bob Carr said that population growth in Australia must be limited by the amount of available water "...the rainfall pattern should fill us though with a sense of this continent's limited carrying capacity"²⁹. The NSW Government also commented in 2004 that "critically, the use and management of water could be a key limiting factor on Sydney's future growth and prosperity."³⁰

Particularly in recent years existing storage facilities have not been receiving anything like their historical inflows due to the widespread drought, which has brought forward the

²⁸ Testing the Water, WSAA Position Paper no 1, Water Services Association of Australia, October 2005.

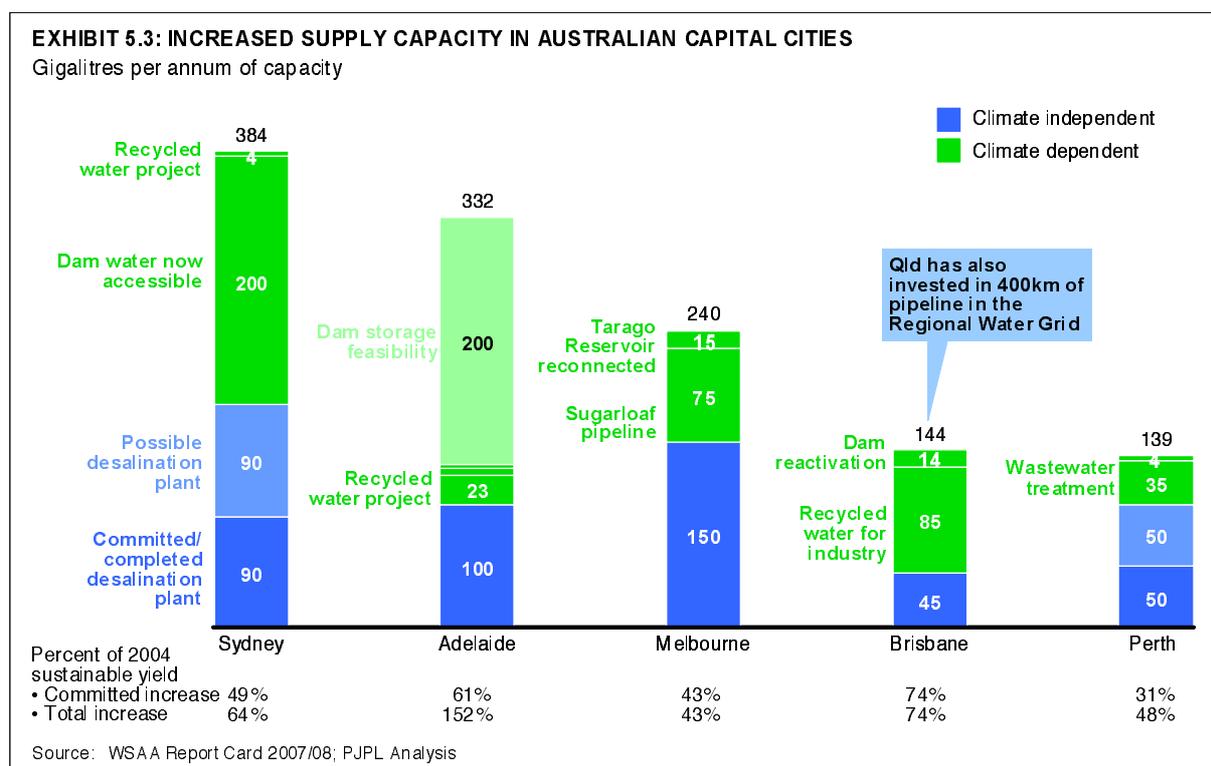
²⁹ Bob Carr, Interview on "The National Interest", ABC Radio National, 31 July 2005.

³⁰ Metropolitan Water Plan, NSW Government, 2004.

problems that were facing Australia's cities anyway. These problems are expected to get worse with climate change.

5.3 The recent large increase in investment and supply

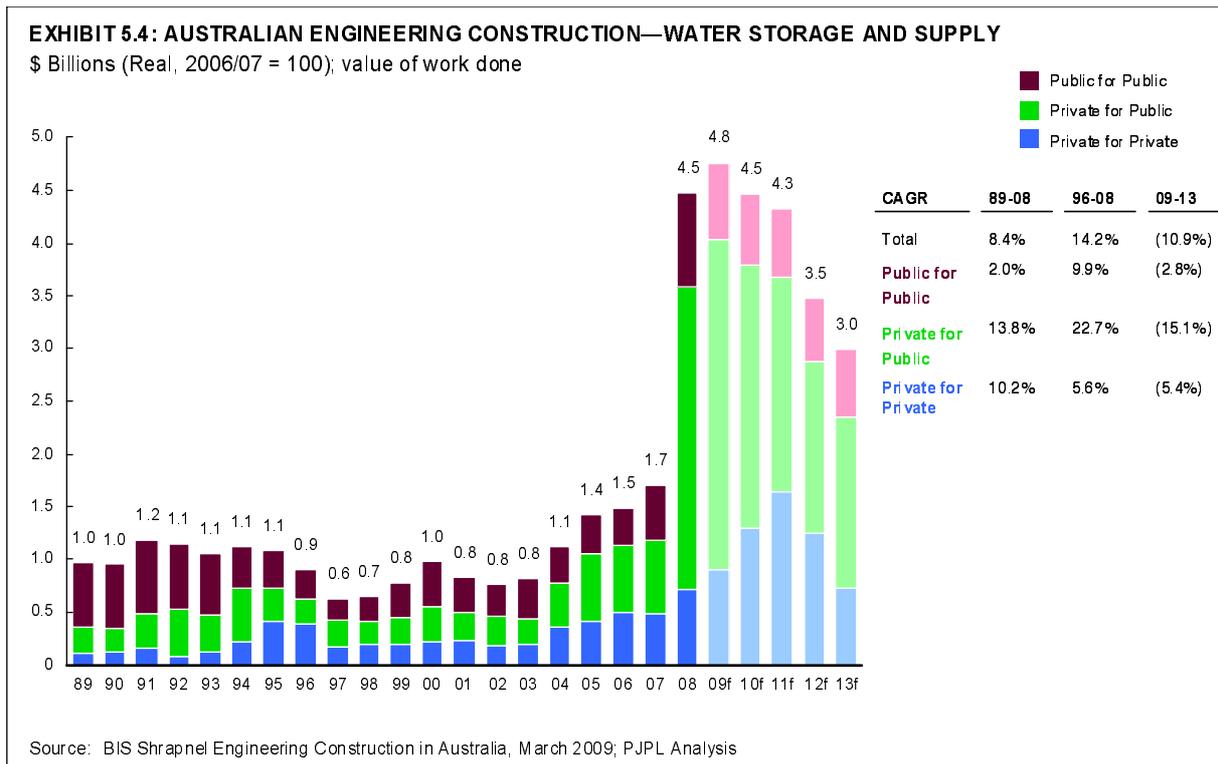
In the last four years and in response to the crisis created by the drought, there has been substantial investment in water supply sources in Australia's capital cities. Exhibit 5.3 shows recent and planned increases in supply capacity. Each city has invested or has committed to invest in a desalination plant, as well as other supply measures, including recycling and reactivating dams. Melbourne has also invested in irrigation improvements in northern Victoria with one third of the water savings to be piped to the city via the Sugarloaf Pipeline.



WSAA reports that “over the next five to ten years, the urban water industry will spend at least \$30 billion developing new water sources ... in 2007/2008 major projects alone in Australia's capital cities accounted for more than \$2 billion - double the previous peak. Expenditure has grown dramatically over the last two years and is predicted to stay at this level until the major new sources of water projects are completed”³¹.

BIS Shrapnel regularly publishes a report of Engineering Construction in Australia. The latest report shows Australian spending on water storage and supply infrastructure grew steadily between 2002 and 2007, then dramatically in 2008. It is expected to peak in 2008/09, after which BIS has forecast a decline, albeit staying at a high level (see Exhibit 5.4).

³¹ WSAA Report Card 2007/2008, Water Services Association of Australia, 2008.



5.4 Some of the recent supply additions may not have been least cost

While the level of investment is welcome, particularly as it removes a perceived but artificial constraint from the economy, some important issues remain. In particular, it is not clear whether the new sources of supply selected were the least cost option in each case.

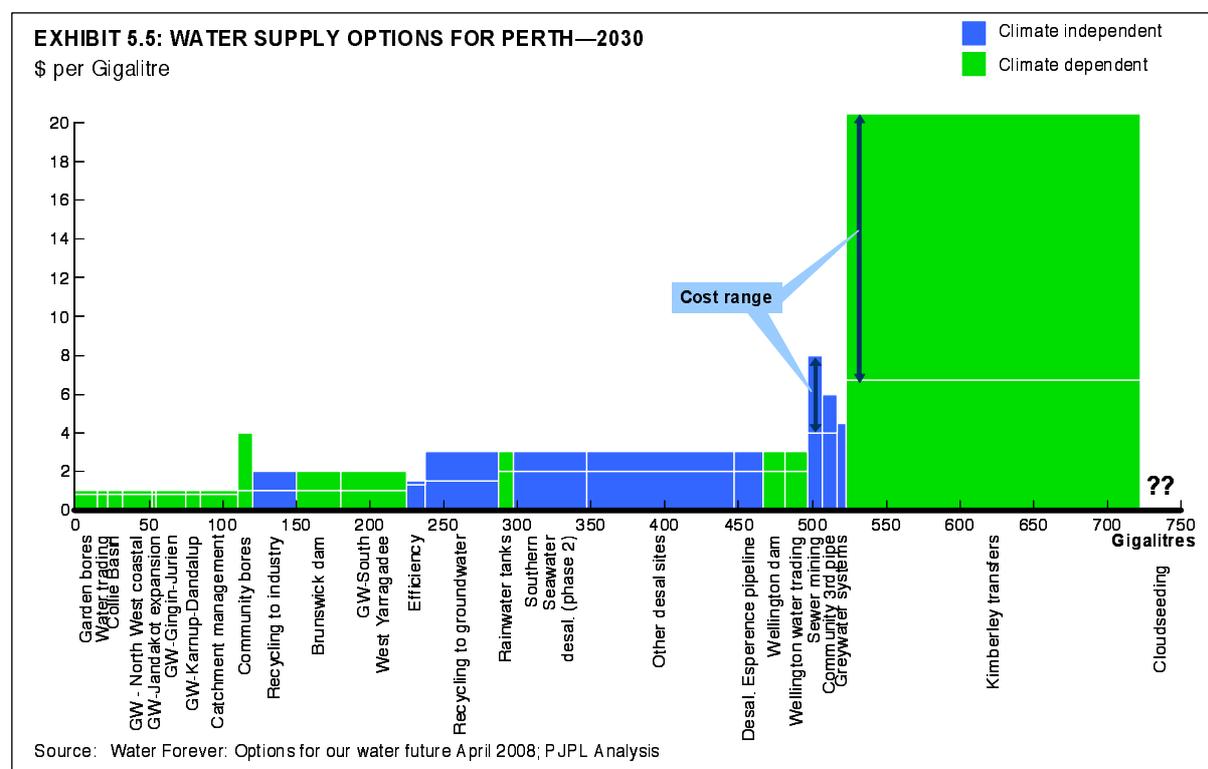
5.4.1 Decision-making transparency has been poor

The process used to decide on new urban water supply has, in general, not been transparent. This means that, while it appears many correct investment choices have been made, we cannot be sure that the increased water supply options have been lowest cost. In addition, the decision making processes have often been ad hoc. This all makes it hard to gain appropriate public support for what are difficult decisions.

A sound decision-making process would involve cost-benefit analysis on all available supply options being made publicly available, and decisions being transparently made based on that analysis and community consultation. With the exception of Perth, it seems that costs for supply options have not been made public, and community consultation has been limited.

Perth appears to have run the most transparent processes for planning for its future water supply. Perth published several supply planning documents, which have included the costs of many different supply options. The most recent planning round, Water Forever, included publication of a document “Options for Water Future” in April 2008. This document has costs and potential capacities for many different supply options, including water trading with irrigation areas, desalination plants, residential rainwater tanks, water use efficiency measures, cloud seeding and using a pipeline, a canal or a super-tanker to bring water from the Kimberley. Using the information provided in this planning document it is possible to

construct a cost curve of supply options, which can be compared to the demand scenarios (see Exhibit 5.5). The public way of running the planning process appears to have led to little public pushback on the need for desalination plants in Perth.



Other cities appear to have run less transparent processes. In many cases supply options were ruled out before analysis was done (e.g. extensive rural to urban trading in Victoria), so it is not clear whether least cost options were chosen. Sydney's decision on whether to install a desalination plant was on the agenda, then off again, and then was finally built; it did not appear to be part of a coherent strategy.

Adelaide had decided on a 50GL desalination plant in 2007, and works are under way. In May 2009, however, the South Australian Government announced that this plant would be immediately expanded to 100GL. The Commonwealth Government offered in the 2009 Budget to pay \$228 million to double the capacity of the plant, if the South Australian Government matched that contribution. This expansion will take Adelaide's desalination capacity to about half of Adelaide's unconstrained water demand. Given that desalination plants are modular, and can be expanded at a future date, it is simply not clear that this decision was required at this time.

5.4.2 Barriers to some possible supply options remain

There continue to be barriers to some crucial supply options.

Water trading from rural to urban users has only been implemented in a handful of cases. With urban water costing many times what is paid for rural water there is clearly potential for some trading to occur, even with high transport costs, to provide cost-effective water. Indeed, industrial, commercial and even household use of water can be of much higher value to Australia than rural water use. In addition, these uses take less than 20% of our water

whereas agriculture uses around 70%, so even a small proportion of the water used in rural areas could have a large impact in urban areas.

It is not just our capital cities, of course, that can use rural water. Indeed, our inland cities have even more opportunities given their proximity to rivers and irrigation water, and given that they often cannot use desalination as a source of alternate supply.

The Productivity Commission has said that “governments ... treated urban and rural water as separate resources... as a result, existing systems poorly accommodate rural-urban water transfers”³².

Indeed, the barriers to urban-rural trade are subtle. There are generally no legislative restrictions, simply a reluctance by politicians to allow this trade.

There are also barriers to greater use of recycled water. For example, legislation in Australia does not clearly govern the rights to gain access to and use reclaimed water. Regulatory responsibilities are diverse so that those seeking to reclaim water must navigate a complex array of policies, regulations and agencies. There is also a conflict between the role of governments as both owners of the monopoly water provider and policy maker in this area.

5.4.3 Bias to conserve not create, and for small scale solutions

There continues to be a bias both by government and in water planning authorities to conserve rather than create water. This was demonstrated most starkly by the lack of any investment in new supply options in Australia’s major cities for decades, while at the same time severe water restrictions were put in place. It continues to be demonstrated with all current planning documents focussing considerable effort on water conservation and efficiency, and on the introduction of water tanks and arbitrary targets for recycling. In most cases, however, the relative costs of such water conservation measures and water supply options are not explicitly compared. They are simply deemed to be appropriate.

5.4.4 The COAG urban water planning principles

COAG has recently considered aspects of urban water reform. In March 2008 COAG agreed to release for consultation eight key principles as part of a “renewed approach to national urban water reform”.

In November 2008 COAG agreed to the adoption of the “enhanced national urban water reform framework to improve the security of urban water”. They also agreed to adopt the National Urban Water Planning Principles (see Exhibit 5.6). It is not clear what the timeframe is for these principles to be implemented by all States and Territories.

³² *Towards urban water reform, a discussion paper*, Productivity Commission Research Paper, Productivity Commission, March 2008.

EXHIBIT 5.6: NATIONAL URBAN WATER PLANNING PRINCIPLES

1. Deliver urban water supplies in accordance with agreed levels of service
2. Base urban water planning on the best information available at the time and invest in acquiring information on an ongoing basis to continually improve the knowledge base
3. Adopt a partnership approach so that stakeholders are able to make an informed contribution to urban water planning, including consideration of the appropriate supply/demand balance
4. Manage water in the urban context on a whole-of-water-cycle basis
5. Consider the full portfolio of water supply and demand options
6. Develop and manage urban water supplies within sustainable limits
7. Use pricing and markets, where efficient and feasible, to help achieve planned urban water supply/demand balance
8. Periodically review urban water plans

Source: COAG; Department of the Environment, Water, Heritage and the Arts

These Principles, if adopted and adhered to, will avoid the problems just discussed. The combination of scenario planning (required under Principle 2) and selection of options based on a “robust and transparent comparison of all demand and supply options” (required under the elaboration of Principle 5) should allow timely investment in least cost supply options to be made, and with greater community acceptance.

5.5 Options for taking urban water reform further

Urban water reform has not benefited from the same attention as electricity, transport or rural water, and structural reform has therefore not kept pace with those sectors. Until recently there has also been little focus from COAG on urban water issues. The National Water Initiative (NWI) does cover urban water issues, but they are peripheral to the focus on rural water. In addition, the focus in the NWI on urban water is on demand management (in paragraph 91) and innovation and capacity building to create water sensitive Australian cities (in paragraph 92), and it does not address supply planning, much less market related reform.

In February 2008 the National Water Commission commented that “...urban water reform has become increasingly imperative since the 2004 signing of the NWI, with the emergence of declining urban water security a significant issue”³³.

Indeed, there are many reasons to pursue urban water reform.

First, we can point to the recent past and remaining problems. These include the past lack of timely supply augmentations, and the inability of households and industry to choose their level of service. When faced with supply restrictions, for example, those who valued high

³³ *Update of progress into water reform, Input into the water sub-group stocktake report*, National Water Commission, February 2008.

reliability were forced to embrace costly alternatives such as water tanks, accessing groundwater, using grey water and, in some areas, curtailing their production (e.g. in the case of some power generators).

Second, there will be benefits from establishing an improved water market and introducing competition. The water monopolies or governments may, for example, see their optimum returns in a lower level of supply whereas in a competitive market supply is usually forthcoming until the incremental cost of supply is matched by the prices consumers are willing to pay. In addition, it is clear that many proposals from supply monopolies have been rejected in the past by their owning governments for political reasons. Further, the more entities able to supply the more likely we are to see innovative supply options.

There is an important example of this last point. It is easy to see why farmers will not want their water to be used in urban areas because they will lose control of their water and will likely not gain full value for it. Their response would likely be different if these same farmers could supply urban areas themselves or could negotiate with competing urban retailers.

There have been many calls for urban water reform.

The BCA published “Water under Pressure” in 2006. The recommendations from that review included the introduction of competition into water supply, the national regulation of water, and the disaggregation of water utilities into monopoly and competitive segments.

The Productivity Commission released a discussion paper in March 2008 called “Towards Urban Water Reform”. It looked at many aspects of urban water including pricing, integration of rural and urban water systems via trading, planning new water supply options and institutional and structural reforms. It concluded that:

“The direction, if not the end point seems clear. The potential gains are sufficient to warrant a comprehensive public review to determine the extent to which a more market-oriented focus could be pursued and alert the community to the tradeoffs.”³⁴

ABARE published a research report in 2008 which looked at appropriate pricing and investment for urban water under climate variability. They concluded that there is a potential role for scarcity pricing for water in place of water restrictions.³⁵

Professor Mike Young has also commented on urban water issues. He has looked at the possibility of applying an urban water cap, and within this allowing water trading.³⁶

There are several areas which should be the focus of further consideration.

³⁴ *Towards urban water reform, a discussion paper*, Productivity Commission Research Paper, Productivity Commission, March 2008.

³⁵ *Urban water management: optimal price and investment policy under climate variability*, Research report 08.7, ABARE, August 2008.

³⁶ *Urban water pricing: how might an urban water trading scheme work?*, Droplet no. 5, Mike Young, Tim McColl and Tim Fisher, February 2007.

5.5.1 Competition

We need to examine carefully whether urban water supply is a natural monopoly or whether there are benefits in allowing competition both between bulk water suppliers and between water retailers. If competition were to be pursued a number of policy changes would be needed, as follows.

- There would need to be an effective, hopefully national, regime in place to allow access to the water pipes. This should likely follow the electricity model with up front price determination rather than the “negotiate and arbitrate” model under Part IIIA of the Trade Practices Act
- It would be important to disaggregate our major water utilities to separate bulk supply from the pipes, and from retail activity
- There would also be a need to clarify rights to waste water as already discussed, and also for stormwater
- We also need to work out the institutional arrangements, and take into account that with water there are many regional markets with unique features.

5.5.2 Trading

As Professor Young and others have indicated it is possible to cap the entitlements of large users and allow them to trade their entitlements so that the available water is allocated to its highest value use. Such a regime could be put in place with and without the introduction of competition.

5.5.3 Governance and entity size

According to the ABS there were 325 urban water providers in 2004/05, of which 235 were classed as ‘minor urban’. The National Water Commission has commented that “in some states, responsibility for the increasingly sophisticated tasks of urban water delivery remains with small and poorly resourced local government authorities.”³⁷ A reform agenda should look at whether these small water providers are still the most appropriate entities to manage our urban water supplies. This becomes more important as such issues as recycling are considered which require considerable professional skills.

5.5.4 Pricing

The reform of water pricing has progressed considerably, and most jurisdictions now have volumetric pricing with block tariffs. Some areas, particularly in Western Australia and South Australia, continue to have the same pricing (‘postage stamp pricing’) for all urban areas across the state, regardless of the cost of local supply options. A reform agenda should review whether such pricing inhibits lower cost local supply sources.

Before embarking on such reforms, some of which are complex and would involve world-first activity, it makes sense to have a wide ranging review of the need for urban water reform.

³⁷ *Update of progress into water reform, Input into the water sub-group stocktake report*, National Water Commission, February 2008.

5.6 A proposed way forward

In light of the above issues and concerns there are three key steps that should be taken.

First, a timetable should be set for each State to implement the National Urban Water Planning Principles. As part of this, each jurisdiction should publish and regularly update a robust cost curve of all available supply options, and the results from scenario planning of demand and currently available supply.

Second, barriers to urban-rural water trading should be removed, and indeed it should be actively backed and promoted by COAG, so that this becomes an accessible source for additional urban supply.

Third, and possibly most important, the Productivity Commission should undertake a comprehensive review of how best to implement urban water reform based around the issues mentioned above.

* * * *

Reforming urban water planning and markets is important if we are to avoid the recent problems, and to make the best use of our available water resources. With climate change, these steps are all the more important.

CHAPTER 6

MAXIMISING THE ENVIRONMENTAL AND ECONOMIC OUTCOMES FROM OUR RURAL WATER

Chapter 6: Maximising the environmental and economic outcomes from our rural water

6.1 Introduction and overview

In our chapter on urban water we observed that water is fundamental to both our quality of life and our economy. This is even more so in rural areas with iconic rivers and environmental assets to protect, and where many individuals and communities depend on irrigation water.

As we argued in 2006 in *Water Under Pressure*³⁸, many Australians believe the nation's rural water resources are always in scarce supply, not just in times of drought. The created water scarcity is exacerbated by drought, but it arises fundamentally because past decades of decisions have over-allocated the available water and also priced it so cheaply that water has often been used inefficiently. That is, as with urban water, the perception of scarcity was created by poor policy; it is not in any sense "natural".

Alternatively, if we allocated appropriate water for environmental purposes (to restore river health and maintain particular physical assets), and allowed market pricing and the laws of supply and demand to operate as they do in every other market, there would be no talk of shortages or of the need to curb Australia's economic growth to meet some artificial physical limit of available water.

Indeed, as we argued in *Water Under Pressure*, the key is to integrate water into the mainstream of infrastructure issues and ensure past policy failures are addressed and active markets are created. Doing this will, however, require strong government action as the transition from where we are now will be difficult.

Unlike with urban water, rural water problems have been long recognised with remedial actions supposedly underway. In 1994 COAG "... agreed to implement sustainable water management arrangements that account for all uses of water (agriculture, industry, household and the environment)."³⁹ The 1994 COAG Agreement also said "... that trading arrangements in water allocations or entitlements be instituted ... no later than 1998"⁴⁰.

The National Competition Council noted in its 2004 Assessment of Governments' progress in implementing the National Competition Policy reforms: "Because COAG (in 1994) expected water reform to involve extensive change it considered that implementation should occur over 5-7 years with the program essentially complete by 2001. In 2001, however, COAG extended to 2005 the time to substantially complete the allocation and trading arrangements in rivers and groundwater systems".

In 2004 the National Water Initiative (NWI) was agreed by COAG. This recognised that: "The current variation in progress with water reforms between regions and jurisdictions ...

³⁸ *Water Under Pressure: Australia's man-made water scarcity and how to fix it*, Business Council of Australia, September 2006.

³⁹ *2005 National Competition Policy Assessment of Water Reform Progress*, National Water Commission, Canberra, April 2006.

⁴⁰ COAG Communiqué, Attachment A, 25 February 1994.

creates an opportunity to complement and extend the reform agenda to more fully realise the benefits intended by COAG in 1994". That is, the 2004 NWI was aimed at securing changes originally agreed to in 1994. While many beneficial changes had been made, especially in relation to facilitating temporary water trades, COAG's original goals were still a long way from being realised.

Indeed, in 2006 the National Water Commission (NWC) stated that "If anything, the risks to Australia's water resources are increasing – especially in the form of growing demand and reducing reliability of supply"⁴¹.

In late 2006 there was a major change in focus and renewed impetus as Australia's drought became so bad that even drinking water was in jeopardy for some cities and towns. The previous Prime Minister launched the \$10 billion National Plan for Water Security in January 2007; this plan was amended and considerably strengthened by the Rudd Government in 2008 to become Water for the Future.

In many ways this plan has the money and referred powers to succeed (see below). It faces, however, a huge implementation challenge. It is also working to a slow timetable which is causing increasing concerns for the environment and confusion for agricultural investment.

In essence, there is a need to reconsider some of the spending allocations and accelerate their disbursement, clarify the implementation plan and steps and accountability for them, accelerate the overall timetable and strengthen the institutions responsible for reform (see Exhibit 6.1).

EXHIBIT 6.1: RURAL WATER OVERVIEW		
Major 2007/2008 improvements	Emerging issues/concerns	Suggested response
<ul style="list-style-type: none"> • Changed rural water priority to ensure sufficient water for river flow and environmental assets, then irrigation <ul style="list-style-type: none"> – Reverses past priority • Have had referral of powers to take MDB-wide view • \$12b now available; have sufficient money for this major adjustment challenge  <ul style="list-style-type: none"> • Best chance to achieve original 1994 objectives • Major implementation challenge 	<ul style="list-style-type: none"> • Some activity needs better explanation; risks causing confusion and resentment • Slow codification of water rights • 2014/2019 implementation timetable appears too slow • Likely too little money for buybacks and structural adjustment, too much for irrigation infrastructure, to achieve environmental and economic objectives • Still important barriers to trade; general market opacity • Developments likely running ahead of institutions 	<ul style="list-style-type: none"> • COAG clarify the rural water objectives and framework it is working to (especially with buybacks, infrastructure) and provide a timely, detailed and transparent implementation plan, codify water rights and bring forward overall completion timetable • Commonwealth revise spending to allocate more to buybacks and structural adjustment to achieve both environment and economic objectives • COAG remove all barriers to trade • COAG review the need for new institutions, e.g.: <ul style="list-style-type: none"> – A national entity to standardise and record all water trades and develop and run the market (a water ASX/AEMO) – An independent body to purchase environmental water against clear guidelines

⁴¹ *Progress on the National Water Initiative: A Report to the Council of Australian Governments*, National Water Commission, June 2006.

This chapter:

- Summarises the longstanding rural water problems
- Describes the recent progress with 2007/2008 reform changes
- Highlights the implementation challenge, and
- Provides proposals to accelerate change and improve the chances of success.

6.2 Longstanding rural water problems

These are essentially in three areas: over-allocation, water not going to its highest use, and waste and inefficiency.

6.2.1 Over-allocation

In *Water Under Pressure*⁴² we observed that, of 325 water basins in Australia, 84 were or were close to being over-used, with the Murray-Darling Basin being the main problem area. In key areas of the Basin licences for water extraction continued to be issued in excess of what the system could sustain. In addition, of 538 groundwater management units, 168 were close to or were over-allocated.

Over-allocation continues to be a major problem for many parts of the Murray-Darling Basin. This is perhaps best summarised in the June 2009 Concept Statement for the Basin Plan from the Murray Darling Basin Authority (MDBA), which says that:

“Many of the Basin’s rivers and groundwater systems are stressed and over-allocated. Lack of water and the absence of natural flooding are having a grave impact on iconic wetlands and other important environmental sites, such as the Coorong, the Murray Mouth, floodplains and wetlands. Individual communities face water restrictions. Industries face shortages, uncertainty and economic losses.”

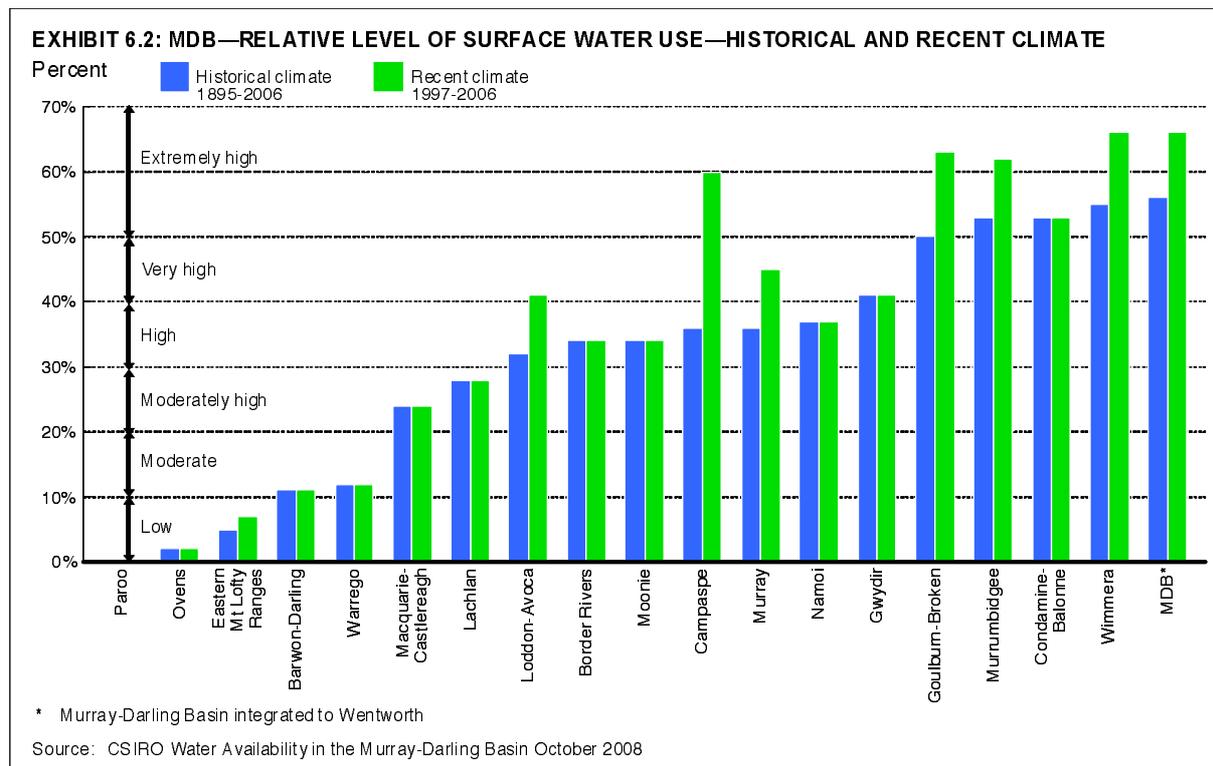
In November 2006 the then Prime Minister and the Basin-State Premiers asked the CSIRO to report on sustainable yields of surface and groundwater systems within the Murray-Darling Basin. The CSIRO “Sustainable Yields Project” published its final report on “Water Availability in the Murray-Darling Basin” in October 2008.

The report measured the relative level of surface water use for each of the 18 regions within the Basin, and for the Basin as a whole (Exhibit 6.2). It shows that under current development with historical average climate (1895-2006) the Basin as a whole has 56% relative surface water use, which is classed as “extremely high” (as for example, it leaves very little for river flow). Four of the individual regions within the Basin are also classed as having “extremely high” relative surface water use, and seven others have either “very high” or “high” relative water use.

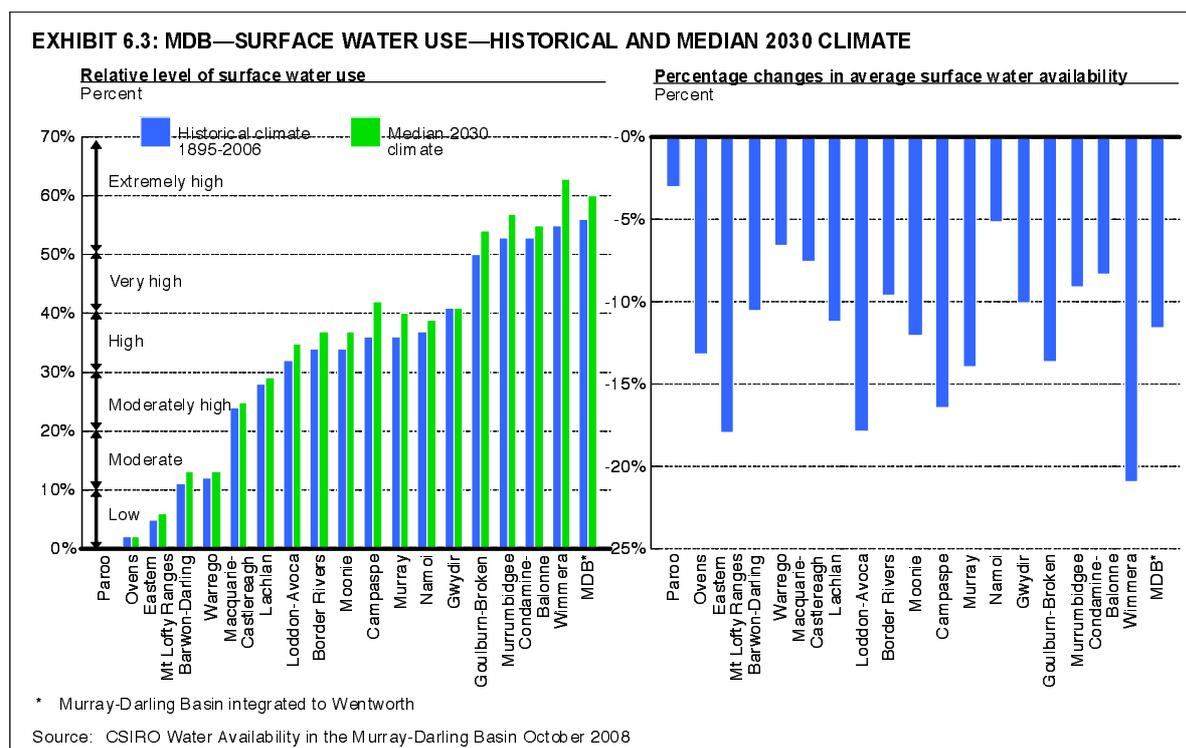
The CSIRO has also modelled the Basin with recent climate (1997-2006). Under this case the Basin as a whole has 66% relative surface water use, and six of the eighteen regions have

⁴² *Water Under Pressure: Australia’s man-made water scarcity and how to fix it*, Business Council of Australia, September 2006.

significantly higher relative water use than under the historical average, the highest being Wimmera at 66%.

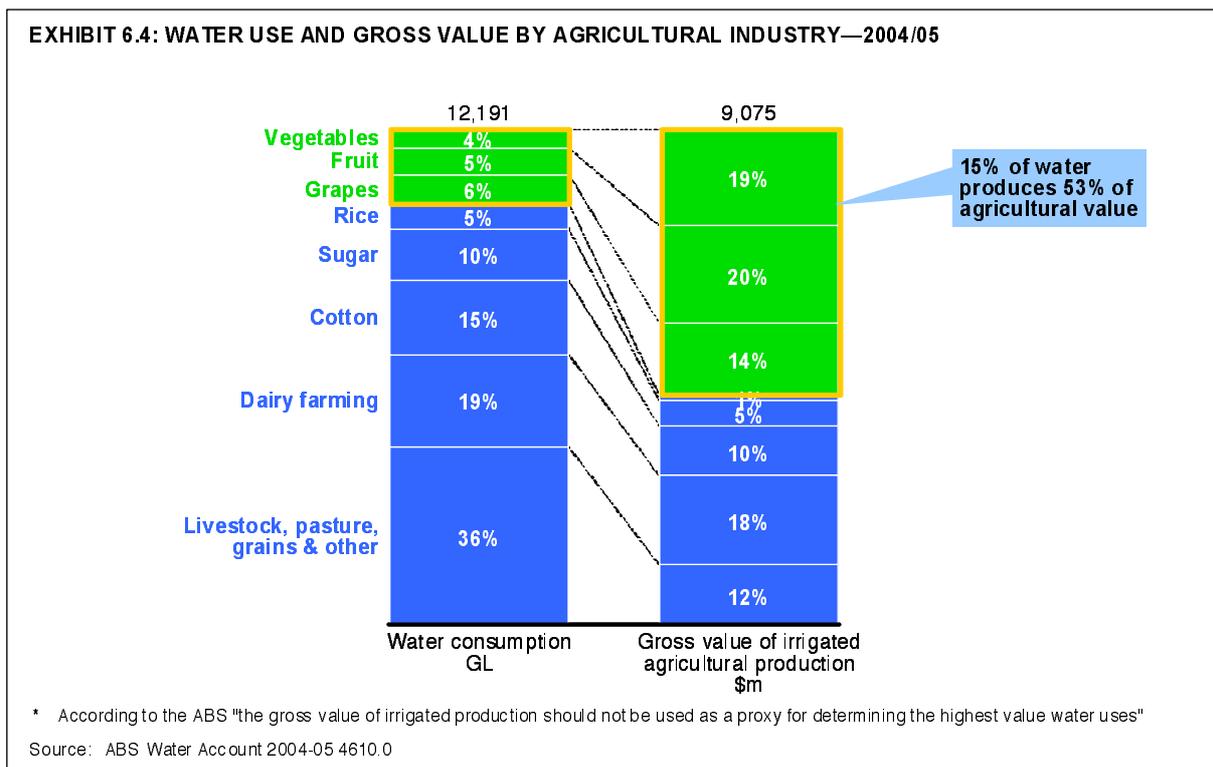


Under the project, the CSIRO also modelled the impacts of climate change on surface water availability in 2030 (Exhibit 6.3). This modelling shows that the median climate change scenario would have a 12% reduction over previously assessed levels of surface water availability in the Murray-Darling Basin, on average, integrated over the system.



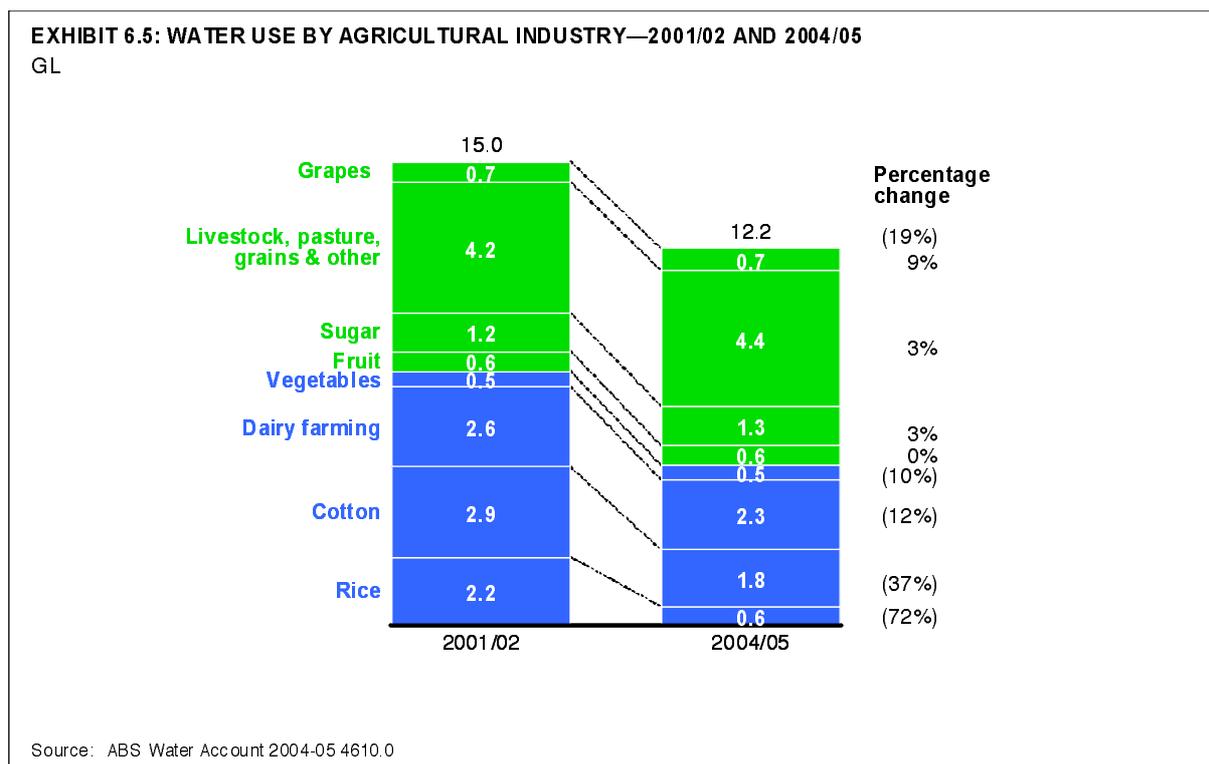
6.2.2 Water not going to its most market valued use

It is important to understand 75-80% of all captured water goes to agriculture, and that 15% of irrigation water produces 53% of agricultural value (see Exhibit 6.4). This does not necessarily mean that we should exit the low value sectors, as they may sometimes be the best use of available water in some areas, but it does mean we should let the market decide how water is used.



The introduction of water trading in 1994 under the Water Reform Framework saw a revolution as water could be traded to more valuable uses. For example, water could transfer from grazing crops to vineyards to underpin the growth of the Victorian wine industry. Water use also improved as people valued what they paid more money for; for example, in the wine industry, moisture monitors were installed at the base of vines to make most efficient use of the available water.

In large part due to trading, water use in Australian agriculture shifted dramatically between 2001/02 and 2004/05 (Exhibit 6.5). The largest percentage decreases in water consumption from 2000–01 to 2004–05 were in rice (72%) and cotton (37%). This is due to a decrease in the irrigated area of these crops and the dry conditions experienced in New South Wales. Overall agricultural water use declined 19% over the period. Other industries, however, increased their water use over the same period, notably grapes (although this is now showing signs of decline).



Water trading is a classic “glass half full” or “glass half empty” story. On the one hand Australia’s water trading system receives world praise and has clearly achieved a great deal when compared to a time when there was no trading. Considerable effort has gone into defining water rights and establishing trade registries.

On the other hand we have a long way to go for two broad reasons.

First, when water trading was introduced, governments and local authorities imposed limits and barriers to trading to minimise the adjustment burden on the affected communities and industries. Victoria, for example, had a 10% non water user limit (now removed), and a 4% trade out limit from any region (now being phased out).

NSW, as another example, has traditionally had barriers in place in terms of high exit fees and complex rules set by local irrigation companies that made trading very difficult. These barriers are now reducing (see the next section), and the recent ban the NSW Government had on sales of water to the Commonwealth has been replaced by annual limits to such sales.

Second, in addition to these explicit State Government restrictions, if the objective is that all those who want water can acquire it if it is physically capable of being delivered, we are a long way from this. The market is often described as opaque: there are still different rules between different areas that bring a lack of clarity to the water right being purchased, these local rules are often not codified, and the rules on the transmission of water are also unclear or are distorting.

6.2.3 Waste and inefficiency

Irrigators historically paid a low price for the rights to irrigation water. Only with the advent of water trading has a true value been placed on water.

It follows that rural water has traditionally been used inefficiently. In 2006 Water Under Pressure referred to an estimated one third of Australia's irrigation water being lost or unaccounted for before the water gets to a farm gate. Shallow dams and lakes allowing major evaporation, irrigation channels that are unlined, uncapped bores and inefficient irrigation practices have been common. These practices have been improving quickly where trading has placed an appropriate value on water.

6.3 Recent progress – the 2007/2008 changes

In 2006 the drought was getting so bad that there were increasingly concerns about drinking supplies for some cities and towns. This crisis led to a major new proposal from the then Commonwealth Government.

John Howard announced the \$10 billion National Plan for Water Security in January 2007. This plan sought both to provide funding and takeover management of the Murray-Darling Basin from the Basin States.

The plan sought to modernise Australia's irrigation infrastructure and achieve efficiency gains of 25% of total water irrigation use, generating savings of more than 3GL per year, with over 2.5GL saved in the Murray-Darling Basin. The plan also sought to address over-allocation in the Murray-Darling Basin by investing \$3 billion in buying back water entitlements and assisting irrigators in the unviable or inefficient parts of schemes to exit the industry.

The Water Act 2007 relied solely on the Commonwealth's constitutional powers. The Commonwealth's original intention was that it would rely on referral of power from Basin states, but agreement could not be reached, in particular with Victoria.

The program had largely bipartisan support in 2007, the election year. In April 2008 the Rudd Government announced the Water for the Future plan. This plan announced \$12.9 billion of funding over 10 years, and most of the key elements of the plan were similar to the National Plan for Water Security.

The key funding components of the Water for the Future Plan are:

- Sustainable rural water use and infrastructure program (\$5.8b)
- Restoring balance in the Basin – water entitlement buyback (\$3.1b)
- Driving reform in the Basin (\$646m)
- Improving water information program (\$450m)
- National urban water and desalination plan (\$1b)
- Water Smart Australia (\$940m)
- National water security plan for cities and towns (\$250m)
- National rainwater and greywater initiative (\$250m).

The Water Amendment Act 2008 commenced on 15 December 2008, and it amends the Water Act 2007. The amendments are designed to give effect to the intergovernmental Agreement on Murray-Darling Basin Reform, which was signed by the Prime Minister, and relevant Premiers and Chief Minister at the 3 July 2008 Council of Australian Governments meeting.

Significantly the Amendment Act relies on the Commonwealth's constitutional powers and a referral of powers to the Commonwealth by New South Wales, Victoria, South Australia and Queensland.

The key changes to the Water Act under the Water Amendment Act are:

- Transfer of the current powers and functions of the Murray-Darling Basin Commission as set out in the former Murray-Darling Basin Agreement, to the new Murray-Darling Basin Authority (MDBA);
- Strengthening of the role of the Australian Competition and Consumer Commission (ACCC) by extending the application of the water market rules and water charge rules to cover, respectively, all bodies that charge regulated water charges and all irrigation infrastructure operators; and
- Requiring the Basin Plan to provide for critical human water needs.

The Water Amendment Act has five key elements:

- The MDBA
- The Basin Plan
- The Commonwealth Environmental Water Holder
- The role of the ACCC
- The role of the Bureau of Meteorology.

6.3.1 The Murray-Darling Basin Authority

The Water Act establishes an independent MDBA with the functions and powers, including enforcement powers, needed to ensure that Basin water resources are managed in an integrated and sustainable way. The Water Amendment Act expands those powers and functions to include undertaking the functions previously undertaken by the Murray-Darling Basin Commission, which has ceased to exist.

Key functions of the Authority include:

- Preparing a Basin Plan for adoption by the Minister, including setting sustainable limits on water that can be taken from surface and groundwater systems across the Basin and identifying the critical human water needs of communities within the basin
- Advising the Minister on the accreditation of state water resource plans
- Developing a water rights information service which facilitates water trading across the Murray-Darling Basin
- Measuring and monitoring water resources in the Basin
- Manage the day-to-day operations of the River Murray system
- Undertaking works as agreed by the Murray-Darling Basin Ministerial Council in the annual corporate plan.

The Authority will report to the Commonwealth Minister for Climate Change and Water on, in particular, the Basin Plan, and to the Ministerial Council on, in particular, River Murray operations. The Authority will implement decisions made by a new Ministerial Council and the new Basin Officials Committee.

6.3.2 The Basin Plan

The Act requires the MDBA to prepare a strategic plan for the integrated and sustainable management of water resources in the Murray-Darling Basin. This plan is referred to as the Basin Plan. The Act establishes mandatory content for the Basin Plan, including:

- Limits on the amount of water (both surface and groundwater) that can be taken from Basin water resources on a sustainable basis. These are known as long-term average sustainable diversion limits. These limits will be set for Basin water resources as a whole and for individual water resources
- Identification of risks to Basin water resources, such as climate change, and strategies to manage those risks
- Requirements that a state water resource plan will need to comply with the Basin Plan if it is to be accredited under the Act
- An environmental watering plan to optimise environmental outcomes for the Basin by specifying environmental objectives, watering priorities and targets for Basin water resources
- A water quality and salinity management plan which must include targets
- Rules about trading of water rights in relation to Basin water resources
- Critical human water needs of communities dependent on Basin water resources.

The Basin Plan will be complemented by water resource plans prepared by Basin States and provided to the Commonwealth Minister for accreditation. The Authority will provide advice to the Minister on whether to accredit such plans, and they will only be accredited if they are consistent with the Basin Plan, including the long-term average sustainable diversion limits.

The Basin Plan will also play an important role in identifying responsibilities for managing risks associated with reductions in water availability and changes in reliability. Where the Basin Plan specifies a reduction in the long-term average sustainable diversion limit, the Basin Plan will also identify the percentage of that reduction for which the Australian Government is responsible.

Where improved knowledge about how much water is needed to protect the environment could have an impact on irrigators, the Australian Government will bear governments' entire share of the risk to irrigators of this impact, compared with the previous shared government arrangements between the Australian Government and the Basin States.

The Basin Plan will be prepared in consultation with Basin States and communities, and the first draft Basin Plan is expected to be available for comment in mid 2010 and finalised in 2011.

6.3.3 The Commonwealth Environmental Water Holder

The Act establishes a Commonwealth Environmental Water Holder to manage the Commonwealth's environmental water. This water is to protect and restore the environmental

assets of the Murray-Darling Basin, and outside the Basin where the Commonwealth owns water. In the Murray-Darling Basin, these holdings will be managed consistent with the Environmental Watering Plan, a component of the Basin Plan that will be developed by the MDBA.

Existing state environmental water entitlements will be held separately to the Australian Government entitlements. Protocols are to be developed among holders of environmental water to enable this water to be managed in a coordinated manner.

6.3.4 The role of the ACCC

Under the Water Act the ACCC is now responsible for:

- Providing advice to the Minister for Climate Change and Water on water market rules and water charge rules
- Monitoring compliance with and enforcing the water market rules and water charge rules
- Providing advice to the Murray Darling Basin Authority on water trading rules for inclusion in the Basin Plan.

This means that the ACCC is now involved in both policy and enforcement of the water market rules and water charge rules.

The purpose of the water market rules is to free up the trade of water access rights within the Murray-Darling Basin by ensuring that the policies or administrative requirements of irrigation infrastructure operators do not prevent or unreasonably delay trade.

The water charge rules aim to ensure that fees and charges payable to irrigation infrastructure operators, bulk water operators and government agencies for water services are based on full, but not excessive, cost recovery. They should facilitate the efficient functioning of water markets by removing distortions to trade and by sending signals to water users about efficient investment in water infrastructure assets.

The water market rules and water charge-termination fee rules were signed by the Minister for Climate Change and Water in June 2009 after advice from the ACCC and a consultation process. The ACCC has also provided advice to the Minister about the infrastructure charges and water planning and management charges which are being considered.

As a result of the ACCC advice, while termination fees may still be levied by the owners of infrastructure, they are only permitted when an irrigator terminates access to the operator's irrigation network. Termination fees are also capped at ten times the irrigator's total network access charge payable to the operator in the financial year in which notice of termination is given unless otherwise agreed.

The MDBA is required to obtain and have regard to advice from the ACCC on the water trading rules. These rules can cover the terms and processes relevant to trade, the manner in which trade is conducted, the imposition or removal of barriers to trade, and the availability of information to enable the trading of water. The MDBA will monitor and enforce compliance with the water trading rules. The ACCC issued an issues paper on these rules in March 2009.

6.3.5 The role of the Bureau of Meteorology

The Bureau is now authorised to collect and publish high-quality water information on a national basis. The publications will include a National Water Account and periodic reports on water resource use and availability. The Bureau will also be empowered to set and implement national standards for water information.

6.4 The implementation challenge

The above changes are clearly essential steps. They involve ensuring water is allocated first to essential environmental needs and then considering irrigation use, which reverses the past priority. They also involve a referral of powers, so that the Commonwealth has accepted overall accountability for success, and they involve considerable Commonwealth funding.

Despite this, the implementation challenges are substantial, and raise some particular issues, as follows.

6.4.1 The spending balance

As indicated above the Commonwealth has allocated around \$3 billion for water buybacks, yet \$6 billion for improving irrigation infrastructure. Many would argue that the priorities are imbalanced, for two reasons.

First, there are doubts that \$3 billion is enough to buy back the required water for both environmental purposes and to improve irrigation reliability and so encourage the required structural adjustment in rural areas. There are also many people wishing to sell, and some are in financial distress. This adds to pressures that can undermine implementation.

In addition, money is also required for structural adjustment in rural areas. Those who sell water may do well, but their surrounding communities may suffer considerably in the transition process. This could lead to political pressure to slow the change process if not addressed.

Second, there is a strong argument that the Government should not fund irrigation investment, as the benefits of increased water availability go to individuals and companies who can justify the investments without a government contribution. Indeed, many had invested prior to the Commonwealth program and they feel aggrieved at paying for what others have gained for free. This is a difficult area as this funding was a key part of the overall political settlement.

In addition, so far the Commonwealth has spent over \$840m on water purchases, and only over \$100m on water infrastructure improvements. This makes sense as it is not sensible to fund improvements in infrastructure in areas that may eventually sell their water and so not require the upgraded infrastructure. Clearly, however, farmers will not outlay their own funds when Commonwealth money is available so the slow spend of Commonwealth money is delaying other spending on improving our irrigation infrastructure.

6.4.2 Confused accountability

In some ways the Water Act compartmentalises and so confuses accountability.

This can occur within the Commonwealth itself as the MDBA is devising the basin and environmental watering plans based on a view of the key environmental needs and assets while the Commonwealth is buying water against its own criteria. In addition, the MDBA is coordinating 500GL for the Living Murray initiative to assist a series of red gum sites separate from the Commonwealth.

There is also potential for confused accountability between the Commonwealth and the States. For example, the Commonwealth might focus on some areas and environmental assets in preparing its plan, but in adhering to its cap the States might allocate water to different priorities. Likewise the Commonwealth could spend money to improve irrigation infrastructure in areas the States may later judge should not receive irrigation water. Finally, it is possible the Commonwealth could buy environmental water in Queensland only to see it flow to NSW and be used for irrigation.

6.4.3 Current activity needs better explanation, causing some confusion and resentment

The Commonwealth Government has spent \$840m on purchasing 545GL of water under the water buyback scheme so far (as at 31 August 2009). The majority of this purchasing was done in 2008/09, with 521GL of water acquired. The largest purchase in 2008/09 was 240GL from the Twynam Agricultural Group.

The water purchased has an average expected reliability of 63%, with some water entitlements having average expected reliability as low as 14% (supplementary entitlement in the Murrumbidgee catchment) and some as high as 100% (unregulated entitlement in the Barwon-Darling catchment).

There has been criticism that the Commonwealth Government is buying without a detailed and published strategy for where environmental water is needed.

NSW Irrigators Council chief executive Andrew Gregson said there seemed no logic to Canberra's pursuit of cheaper and less reliable water entitlements in unconnected catchment areas. "It's reflective of the lack of a strategy," he said. "What are you trying to achieve, therefore what are you trying to buy?"⁴³

The lack of certainty about what water is being purchased, and how it will be used, is also adversely affecting businesses reliant on water. The government is buying up water from willing sellers, but it is not clear how much water it intends to buy from any one region and how much water will remain for farming once the buybacks are concluded. Bernie George, general manager of Auscott's Namoi Valley said "we can accept uncertainty from drought, but the lack of information about future water availability compounds that"⁴⁴.

⁴³ Buyback plan fails Murray Darling river system, The Australian, 9 July 2009.

⁴⁴ Australian Financial Review, 4 August 2009.

While the Commonwealth's water purchases can appear ad hoc, based only on where the willing sellers are, and are occurring prior to completion of the Basin Plan, there is clearly some overall framework and logic. This needs to be better explained.

It is encouraging that the Department of the Environment, Water, Heritage and the Arts has recently released the criteria against which it decided to purchase water entitlements offered to it for sale for the 2008-09 purchasing round. The criteria were based on maximising the environmental benefits of the program against a widespread environmental need for water, and a substantial but limited purchase budget. The Department has indicated that it prioritised catchments as high, medium or low priority, and focussed attention on high and medium priority catchments. They also indicated that they only accepted water offered for purchase if it was rated a low or moderate risk in capacity to deliver. Releasing these criteria is a step in the right direction.

6.4.4 Lack of codification of existing rights

The key point here is that, with many decisions about to be made by the MDBA, it is important that existing water property rights are codified so that we have a clear starting point from which to track changes to those property rights due to the MDBA decisions. Without this codification the MDBA decisions could, unintentionally, cut across or confuse rights which can cause disputes and resentment. It is worth elaborating this important point.

Each jurisdiction in the Murray-Darling Basin issues tradable water rights/licences based on its assessment of water resources within its control. The shared resources of the Murray-Darling Basin are a major part of each jurisdiction's resources to be allocated. For example, Victoria's share of Murray-Darling resources constitutes about 50% of Victorian water in the north of the State.

Each State's right to water under the Murray-Darling Basin Agreement is established explicitly at a high level within the Agreement. Due to the complexity of the River Murray system, however, the translation of these 'high level' rights to the actual availability of water in any year is subject to explicit and implicit rules associated with the operational systems of the River Murray, and water accounting interpretations and assumptions that exist within system models.

Historically under previous institutional and governance arrangements explicit and implicit operating rules were subject to review and agreement by technical committees and, where appropriate, endorsement by the Murray-Darling Basin Commission. Many of the rules and decisions were not fully articulated or written down. They did not have to be given the institutional/governance arrangements with the Murray-Darling Basin Commission where consensus agreement was required.

With the recent change to the institutional arrangements, as described above, the MDBA, although required to seek agreement from the Basin Officials Committee and Ministerial Council on matters which impact on state water shares, has increased independence without the same governance structure that previously existed. The MDBA is now a Commonwealth agency reporting to the Commonwealth Minister for Water and on many matters is subject to the direction of the Commonwealth Minister.

To ensure transparency and community confidence, therefore, it is important that implicit operating rules and accounting assumptions are made explicit and codified so that any changes to these arrangements are subject to review and if necessary compensating actions.

Without this, water users and communities within the Basin may well contest the foundation on which the future Basin Plan is based.

6.4.5 The implementation timetable appears too slow

This can be seen in part in the pace and timetable of the water buybacks and infrastructure spend. It can be seen much more in the timetable for the implementation of the Basin Plan.

While a draft of the plan will be available in mid 2010, and the final plan will be complete by the end of 2011, new State plans to implement the arrangements will not come into effect until the existing plans expire generally in 2014, but in Victoria in 2019. This timing was to respect the existing plans as they are the basis on which people have invested.

There is an argument for respecting the timing of the existing plans, and further that some delays are understandable as determinations must be made as to which environmental assets and river flows should be targeted, and (much more difficult) which should not, and how much water will be available for irrigation. These difficulties do not seem to justify waiting 5-10 more years to achieve the objectives first formulated in 1994.

A further concern is that significant delay could see the reform momentum lost as circumstances and governments change.

6.4.6 Barriers to trading

Mention has already been made of recent Victorian barriers to water trading, and the more institutional barriers in NSW which are now being addressed by the ACCC.

What is clear, however, as stated earlier, is that even with the above barriers addressed, there are many more subtle barriers in terms of poorly defined rights, many different and not necessarily codified local rules (as discussed above), and unclear and distorted water transmission arrangements.

6.4.7 Ensuring we have the right institutions

There is a sense in which developments in the water sector are running ahead of the available institutions.

Water trading will increase, and water will be increasingly valuable. There is, however, no central institution recording and providing transparency on trades, as does the Australian Stock Exchange (ASX) for shares, or managing and running the market, as does the Australian Energy Market Operator (AEMO) for electricity. Such an institution could be a powerful driver for codifying and clarifying rights to water, and providing a transparent market.

The ACCC is both developing and enforcing the water market rules. There are two problems. First does it have the concentrated expertise as a water policy developer? Second, there can

be a conflict in one entity both developing and enforcing policy as the two roles can become confused. The electricity industry has addressed this with the Australian Energy Market Commission (AEMC) as the rule maker and policy adviser and the Australian Energy Regulator (AER), which is part of the ACCC, as the rule enforcer.

Finally, there is the question of the role of the Commonwealth Environmental Water Holder. This is a statutory position, but it sits within a Commonwealth Department which can make its decisions hard to separate from Ministerial decisions. There may be a case for an independent trust with a well qualified board both buying and allocating the water against clear guidelines set by the MDBA. A greater sense of separateness from the political process, and the credibility gained from recognised experts on the Board, would help achieve a sensitive objective with reduced pushback from the community.

6.5 Proposals to accelerate change and improve the chances of success

It is, of course, difficult to suggest changes to a process that has travelled so far to get to this point. Much of what we have now will be seen by many as fragile, and therefore not to be tampered with. It is, however, this fragility that raises the concern over the Commonwealth's and the States' ability to execute further reform to achieve the clear objectives.

It is important to understand that the previous Government's 2007 package was put together in haste. It was the result of growing frustration with a lack of progress running into the potentially extreme consequences of a severe drought. The current Government's 2008 package built on the original foundations. This is in no way a criticism; it cannot be said, however, that the detail of implementation was fully thought through. We now have, however, the benefit of 2½ years of experience to build on.

There are two key imperatives: successful execution, so that we achieve the clear objectives that have been stated since 1994 now that we really do know all the obstacles before us, and now that we have the main tools at our disposal; and acceleration of the process so that the plans are in place before 2014/2019. Indeed, there appears to be a growing sense in both the environmental movement and within the agricultural and rural communities that greater haste is needed.

To achieve these objectives COAG should review the current implementation approach and timetable to achieve the following:

- A timely, detailed and transparent framework for the current water buybacks and infrastructure spend so that their objectives are clear
- More detail on the policy implementation and operational strategy so that it is clear how the roles of all the Commonwealth and State players work together to achieve successful execution, and how implementation can be accelerated
- The codification of all rights to water in the Basin as quickly as possible
- A rebalance of the spending so that the key environmental and economic objectives can be achieved, particularly greater certainty around water allocations being delivered in most years, and so that there is money available for structural adjustment in some rural areas
- The removal of all barriers to trade, and an improved method of charging for transmission losses

- An enhancement of the institutions that will drive implementation, in particular an examination of whether we need:
 - An ASX/AEMO-type body to standardise and record all water trades and develop and run the water market
 - An independent body to purchase and use water against clear guidelines.

The NWC released Australian Water Reform 2009, its Biennial Assessment of progress in implementation of the NWI as we were going to press. In it the NWC emphasises the need for further reform and cautions that while some good progress has been made, there is much still to be done. We have included a brief addendum at the end of this Chapter with selected quotes from their report. It is pleasing that what we are saying in this Chapter is closely aligned with the NWC's findings and recommendations.

* * * *

We have been trying to address Australia's rural water problems since 1994. We are now better positioned than ever before to achieve success in this vital endeavour. COAG should review, strengthen and accelerate its implementation strategy so that the excellent opportunity before us is not lost.

ADDENDUM:

National Water Commission's 2009 Biennial Assessment of progress in implementation of the National Water Initiative

The National Water Commission released Australian Water Reform 2009 as we were going to press. We include here selected quotes from the letter to the Prime Minister and the Executive Summary which illustrate their conclusions.

Letter to the Prime Minister

- "The recommendations in this report are unapologetically a reform agenda."
- "...the quality of water management in Australia has not been improving fast enough...and continued hands-on leadership from COAG will be vital."
- "There are significant gains in national productivity...to be made"
- "The Commission has long been convinced of the value of financial incentives from the Commonwealth...to implement necessary reforms."
- "...the Commission has estimated that in northern Victoria the combined impacts of water buybacks and climate change on long-term average water available for consumptive use may be in order of 30 per cent."
- "...the Commission urges that affected communities be given clear information about future reform directions, buyback plans, environmental objectives, infrastructure investment plans and risk assignment arrangements."
- "...the Commission is critical of the arbitrary four per cent limit to water markets...[and] recommends all such measures be removed..."
- "When water extractions finally reach sustainable levels...will at last have the clarity and confidence for long-term planning...our national productivity will lift. Our water-dependent environmental assets will be more secure...acrimonious disputes...will reduce. Public concern and debate...will begin to settle."

Executive Summary

- “Progress in the past two years has been good, but the Commission has identified some areas where reform has been slow or inadequate...[and] has made 68 recommendations...”
- “Over the past two years, few new [water] plans have been finalised...it is now timely...to reset and republish realistic timeframes for the rollout of remaining water plans.”
- “The National Water Accounting Development Project is developing standards...have been some advances...overall progress remains slow...only limited success has been achieved in registration and reporting of environmental water...”
- “...the role of environmental water managers is not adequately defined and resourced.”
- “...there are no...accountable mechanisms for registration of...environmental water...”
- “...the relationship between buybacks, providing for environmental assets, and the transition to new sustainable diversion limits is not well understood.”
- “...the Commission recommends that the Murray-Darling Basin Authority progressively issue guidance on environmental objectives and environmental water management plans...”
- “The NWI Agreement aims to complete the return of all currently overallocated or overused systems to environmentally sustainable levels extraction, and calls for ‘substantial progress’...by 2010...the Commission is disappointed to conclude that this...will not be met.”
- “The Commission has been promoting...consistent terminology and definitions of ‘overallocated’ and ‘overused’ systems since 2005...some slow progress...but further and faster work is needed...”
- “...the MDBA should...explain the relationship between buybacks and the transition to sustainable diversion limits.”
- “...implementation of the NWI water access entitlements framework remains slow...The Commission recommends that jurisdictions review and reset their implementation plans within six months...”
- “...the need for more complete and transparent specification of water entitlements and allocation methods...”
- “...the Commission argues strongly that remaining artificial trade barriers...be removed.”
- “...there have been delays in implementation in almost every area of the NWI...the need for more significant reform...has, if anything, intensified.”
- “The commitment to establish new sustainable diversion limits under the Basin Plan need to be integrated with complementary initiatives...needs to be communicated...”
- “...It has become increasingly important to clarify the roles and responsibilities of government agencies to minimise duplication and improve policy coordination.”
- “The Commission encourages all governments to more clearly communicate the benefits of a unified and principles-based approach to water reform...”

CHAPTER 7

MAINTAINING RELIABLE AND COST COMPETITIVE ELECTRICITY AS A CONTINUING SOURCE OF ECONOMIC ADVANTAGE FOR AUSTRALIA

Chapter 7: Maintaining reliable and cost competitive electricity as a continuing source of economic advantage for Australia

7.1 Introduction and overview

Our past reports on the electricity sector have focussed on many important issues. These have covered generation and transmission investment signals, regional boundaries, uniform regulation, continuing government ownership of generation, retail price caps and time of use metering, to name a few.

Important as they are, these issues are now overwhelmed by the likely effects on the electricity sector of policies to reduce greenhouse gas emissions. This is not surprising: there is a desire to move from around 85% coal-fired generation to largely emissions-free generation in a short period of time. The Commonwealth Government is bringing about a revolution in our electricity sector principally through the Carbon Pollution Reduction Scheme (CPRS) and the expanded 20% Renewable Energy Target (RET).

This revolution raises at least two key questions:

- How will Australia's electricity market and also reliability of supply cope with the low emission transition challenge?
- What will the effects on Australia's longstanding international competitive advantage in low energy costs be, and what can Australia do to preserve this advantage?

This chapter will argue that Australia's electricity sector will require very close policy involvement and monitoring by the Commonwealth Government in particular because:

- Given the nature and speed of the desired revolution in our electricity sector continuing **reliability** cannot be assured
 - Indeed, the Commonwealth will need to do more to ensure reliability
- The Commonwealth's coming Energy White Paper needs to address the issue of Australia's future relative energy costs, the **competitiveness** implications for Australia, and what policy response is required
- Many of the traditional energy policy reform issues that are aimed at improving market **efficiency** are now, if anything, more important than they have been in the past.

These key concerns and proposed responses are summarised in Exhibit 7.1 and outlined in more detail in what follows.

EXHIBIT 7.1: ELECTRICITY SECTOR OVERVIEW	
Key concerns	Proposed responses
<p>1. We cannot currently be certain we can maintain electricity supply reliability during the coming rebuild of our electricity supply system. There are</p> <ul style="list-style-type: none"> – Operational challenges – Investment challenges – Warnings from the AEMC 	<ul style="list-style-type: none"> • MCE consider AEMC recommendations carefully • Commonwealth can do more in its CPRS implementation to ensure reliability
<p>2. Retail electricity prices in many States will likely double by 2015 for a range of reasons</p> <ul style="list-style-type: none"> – Australia may not be well positioned to maintain its energy cost advantage over its competitors 	<ul style="list-style-type: none"> • There is a crucial role for the Commonwealth's Energy White Paper to: <ul style="list-style-type: none"> – Test these issues through scenario analysis – Provoke a wide ranging debate as to the best policy responses
<p>3. Many traditional energy issues have lagged in recent years</p> <ul style="list-style-type: none"> – Retail price caps, smart meter rollout, interstate transmission issues, improved locational signals, prudential issues, ETEF 	<ul style="list-style-type: none"> • The CPRS and expanded RET in particular increase the urgency of addressing these longstanding issues

7.2 Ensuring continuing reliability and a well-functioning electricity market

There is a compelling argument that electricity prices will be set so that we always have sufficient generation and associated distribution and transmission capacity to meet demand. The signalling inherent in the electricity market has seen investment in new capacity over recent years.

While market mechanisms work there are a number of problems combining here that signal caution in leaving continued electricity reliability to the market. Significantly, the Australian Energy Market Commission (AEMC) has also raised important concerns. Given the asymmetric risk of not having enough power (requiring load shedding) versus having too much (we invest too early) it is recommended that Governments adopt a conservative approach. Each of these points is summarised in Exhibit 7.2, and shall now be addressed in turn.

EXHIBIT 7.2: ISSUES CONCERNING ELECTRICITY RELIABILITY AND A WELL FUNCTIONING MARKET	
Key concerns	Proposed responses
<p>We cannot currently be certain we can maintain electricity supply reliability during the coming rebuild of our electricity supply system</p> <ul style="list-style-type: none"> • Operational challenges <ul style="list-style-type: none"> – Brown coal as intermediate plant – Large generation value loss leading to reduced maintenance – Intermittent wind generation – Increasing transmission congestion • Investment challenges <ul style="list-style-type: none"> – Huge financing need – Technology and carbon price uncertainty – Possibly few investors – Planning “speed bumps” • AEMC concerns/recommendations <ul style="list-style-type: none"> – More options to AEMO to procure capacity – More efficient load shedding provisions – Increase spot market cap – More flexible retail price changes 	<ul style="list-style-type: none"> • MCE consider the AEMC’s recommendations with transparency, and some urgency • Commonwealth Government consider <ul style="list-style-type: none"> – “buying” extra protection for system security/ reliability through the CPRS compensation package – Longer carbon price certainty for generation investment than 5 years – Reducing working capital needs of generators – Referring the adequacy of the Retailer of Last Resort provisions to the AEMC for examination

7.2.1 The difficulties with relying on the market to ensure reliability

It is hard to imagine another sector that has faced the same disruption that is, or is about to, confront the electricity sector. There are both massive operational and investment challenges.

Operational challenges

There are a number of operational challenges which are well known and will only be briefly summarised here.

First, currently in broad terms it is cheapest to produce electricity using brown coal-fired generation, then black coal, then gas. The likely price on carbon from the CPRS will soon reverse this despatch order. This may, for example, see baseload coal plants that were built for continuous operation having to run as intermediate plant which may be technically difficult.

Second, modelling conducted by ACIL Tasman, ROAM and Frontier Economics estimates that the value loss of brown and black coal generators due to the CPRS will be around \$10 billion over 10 years (one other consulting firm, MMA, has derived a much lower figure). For some plants this could reduce their value below their debt. In addition, some \$19 billion of existing debt needs to be refinanced by the generation sector by 2015. If that refinancing is not available the equity holders may be reluctant to support the plant. Indeed, the current CPRS increases their working capital needs considerably. The point is that it cannot be assumed that it will be economic to operate all existing plant.

These considerations are already affecting decision making. In an interview in July 2009 the CEO of TRUenergy Richard McIndoe said that TRUenergy was reducing long-term maintenance on its power station in the La Trobe Valley this year, and that it was being put off until there was greater clarity about the CPRS. He said that it was hard to justify spending

\$150m this year on long-term maintenance without knowing how long they were going to be able to operate the plant.

Third, the expanded Renewable Energy Target (RET) will bring forth mainly wind generation. Wind is likely to make up the majority of the expanded RET because other renewable technologies are not yet viable. Geothermal generation is promising, but at best some years away and with technical hurdles to jump, and solar generation remains too expensive even with the expanded RET scheme. The AEMC has indicated that there could be around 6,000MW of wind generation by 2020⁴⁵. The problem with wind generation is that it is intermittent, as it needs the wind to blow. It therefore requires additional peaking capacity (likely gas fired) to manage the gaps in output. This could lead to system reliability issues. Wind generators are also likely to be clustered in remote areas, requiring new transmission capacity to be installed.

Fourth, the change in generation mix due to the expanded RET and the CPRS will see changing transmission flows. These changed transmission flows will be different to what the transmission system was built for, and so will likely see an increase in congestion across the network, which could lead to generation on occasion being unable to dispatch.

Investment challenges

There are, however, much larger investment challenges, which are also well known.

First, the electricity sector needs not only to invest to meet rising demand, itself a significant task, but also to invest to change out or rebuild most existing generation, which is an enormous task. In addition, there is a need to connect the new renewable generation that will often be located a long way from the current grid.

In a recent speech to CEDA Michael Fraser, the CEO of AGL indicated that the Australian energy market could have capital needs of \$106 billion over the next five years. This capital is required for refinancing of existing generation and network infrastructure, new investment in generation and network, and working capital to purchase emission permits. In the context of the global financial crisis we cannot be certain that this level of funding will be available.

Second, any investment in generation is a “bet” on technology and an uncertain carbon price. Such uncertainty would make future coal-fired investment without carbon capture and storage likely unbankable because of concerns that there will be a high carbon price. It is also difficult currently to bank baseload gas plant as the carbon price may be too low to displace coal. Over the top of these immediate issues is the uncertainty of, say, future geothermal plant: when might it be viable and at what cost?

The proposed CPRS will have firm emission caps for at least five years in advance. In addition, up to a further 10 years of guidance will be provided through the establishment of ‘gateways’ or ranges within which future scheme caps will lie. Scheme caps will be extended by one year, every year, to maintain five years’ guidance. Gateways will be extended for five years, every five years. While this level of guidance will provide some level of certainty, the

⁴⁵ *Review of Energy Market Frameworks in light of Climate Change Policies: 2nd interim report*, Australian Energy Market Commission, June 2009.

timeframes do not align with the perspectives of the companies and banks who will need to commit to financing electricity generation projects.

Third, is the issue of which firms will invest. The owners of 85% of existing plant, which is coal-fired, may be unwilling investors. They are either international companies that will have their existing assets significantly impaired, or they are the NSW and Queensland Governments which, in addition to having their assets also impaired, though to a lesser extent, have signalled that they are very reluctant investors in electricity generation. AGL and Origin are keen to invest, but clearly cannot manage the entire investment task alone.

Fourth, all States except Victoria maintain caps on the price paid by households for electricity. There are concerns that these are already too low to justify investment in the value chain, or will not be adjusted sufficiently quickly as the CPRS and other factors increase electricity prices.

Fifth, the AEMC has found that there are currently relatively tight capacity margins, and they have said that the “uncertainty over carbon pricing policy... may have contributed to relatively tight capacity in some regions, most notably Victoria and South Australia”. The 2008 Statement of Opportunities (SOO) indicated capacity reserves in South Australia and Victoria are expected to be at or below minimum reserve levels until at least 2010-11. The AEMC has said that “there is little likelihood of new scheduled generation appearing in time to mitigate the shortfall identified”. The 2009 SOO has softened this view as demand has reduced with the downturn in activity, but demand could pick up quickly with the recovery.

Finally, many in the market are confident that the required investment will occur. They see considerable new investment in wind generation and gas peaking plant filling the void. Even if this is correct, and new investors and finance can be found, there is a need to gain the required planning approvals fast enough to ensure capacity additions are timely. Granting the required approvals in the scale required is likely unprecedented.

The above is **not** arguing that Australia will see a lack of electricity supply and brownouts. It is, however, arguing that there are an unprecedented number of reasons why we cannot be assured of continuing reliable electricity supply in the years ahead. On this logic there is a case for caution, and to bias policy to ensure reliable supply.

7.2.2 The AEMC’s perspective

Conscious of the above issues the Ministerial Council on Energy (MCE) asked the AEMC to examine how the electricity market might cope with climate policies. In its recent report “Review of Energy Market Frameworks in light of Climate Change Policies—2nd interim report”⁴⁶ the AEMC made a number of recommendations to improve the resilience of the current framework in managing potential short-term capacity shortfalls:

- The spot market cap may require significant upward adjustment over time (it is already being increased to \$12,500/MWh from 1 July 2010).

⁴⁶ The AEMC released the Final Report of its Review of Energy Market Frameworks in light of Climate Change Policies as we were going to press. We have included a brief addendum at the end of this Chapter outlining the relevant key changes in recommendations between the 2nd Interim Report (on which the commentary in our report is based) and the Final Report. We do not believe the changes affect the conclusions in this report.

- The Australian Energy Market Operator (AEMO) may require more flexibility to access capacity close to real time to manage system reliability.
- The AEMC is looking at reducing the economic costs of managed load shedding when it is required to maintain power security
- The AEMC wants increasing flexibility for regulated retail pricing. All jurisdictions except Victoria retain some form of retail price regulation, and the AEMC feels that the costs of the CPRS will need to be reflected in regulated retail tariffs in a more timely manner to minimise risks to retailers and customers.

The AEMC considers it prudent to consider how AEMO's ability to manage potential reserve shortfalls should be strengthened. Significantly, they consider that the current frameworks would not adequately address short-term capacity shortfalls following the introduction of climate change policies. This conclusion was based on their concern that there is a risk that some capacity may retire early due to technical failure, and because climate change policies affect the future profitability and underlying value of generation assets. They consider there is a technical risk to the availability of existing plant due to the introduction of the CPRS and expanded RET. The technical risks due to the CPRS could arise if a unit is required to vary its output more frequently rather than running as baseload. It is also possible that if a plant with a short future fails, money may not be spent to return it to service.

The AEMC recommends that the options available to AEMO to procure reserves should be expanded. The additional options they have proposed for AEMO to procure reserves are:

- Short notice reserve contracting, as the Reliability and Emergency Reserve Trader (RERT) Guidelines and Procedures currently do not allow reserve recruitment closer than 10 weeks. This option would provide additional reserve to prevent involuntary load shedding
- Standing reserve, which could reduce the need for AEMO to exercise discretion about whether to contract additional reserve via the RERT.
- Prolonged target reserve, which could allow reserve to be purchased subject to appropriate thresholds being reached. Part of the threshold test could be that there is a reserve shortfall larger than the RERT mechanism can cope with.

The AEMC has recommended that the Rules be amended to promote more accurate reporting of demand-side capacity. They have also recommended that existing embedded generation be used more effectively to manage potential shortfalls.

The AEMC is also seeking views on an additional mechanism to facilitate more efficient load shedding, in the event that AEMO needs to shed load to maintain system security.

Over the long-term, as distinct from the coming period of transition, the AEMC feels that the current framework is sufficient to provide the signals required to invest in generation, transmission and demand response. It will, however, be necessary to maintain those signals, which is likely to involve "significant increases in the spot market price cap over time, in particular to ensure that the necessary peaking plant to complement intermittent wind-powered generation is economically viable".

While the above measures are sensible, they do not address the underlying problems; instead they seek to address the result of the problems.

7.2.3 Considering further steps

Governments will obviously need to give the above AEMC recommendations serious consideration. There is also a need to consider four more steps.

First, within the CPRS generators receiving free permits under the Electricity Sector Adjustment Scheme (ESAS) can only retire the plant if AEMO considers the decision would not cause or add to a reserve capacity shortfall during the subsequent two years. This provision is to provide additional assurance against the risks of premature withdrawal of capacity and consequent risks to energy security. In return generators are given free permits equal to around one third of the modelled total asset value loss of their plant due to the CPRS.

This is a contentious area of policy. The generators want more free permits to cover their losses; others argue they should receive no free permits at all. As an equity issue there is no clearly right answer. Instead, the issue should be viewed as achieving the smoothest possible transition to a very different world.

There is merit, therefore, in arguing that the Commonwealth is buying extra protection for system reliability with its free permits given the inability to close plant without AEMO approval as just described. Within this line of argument the Commonwealth could consider using compensation over a longer period than the five years envisaged under the ESAS to achieve a more orderly closure of carbon intensive plant. This would bias to giving AEMO even more control over plant closure given the extreme consequences of inadequate supply.

Second, the Commonwealth needs to ensure there is a long enough period of carbon price certainty to bank new investment. While the immediate generation is only wind and gas peaking plant the currently envisaged five years of carbon price certainty may be enough. It is likely insufficient, however, to bank future baseload plant. For such plant the Commonwealth could consider selling a financial instrument that provides longer carbon price certainty at least to underpin the timing of bank debt.

Third, the electricity industry is unusual in that generators need to buy and hold permits often for three years to back their forward contracts for electricity (indeed, there is a desire to encourage market participants to hedge for longer than three years.) This is estimated to require an additional \$10 billion in industry working capital, subject to whether or not the financial markets can devise sufficiently attractive instruments to avoid this cost. Given the other capital needs of the industry there is merit in the Commonwealth considering a deferred settlement arrangement.

Fourth, there is merit in the AEMC examining the Retailer of Last Resort provisions. With more volatility in the market and higher spot prices, some retailers may be at greater risk of failure in future. Were they to fail, and their customers and contracts assigned to another retailer, the additional risk may be difficult for the receiving retailer to cover adequately in the market.

The above are complex and also value laden topics. There is merit, however, in biasing policy in the above ways to smooth what will inevitably be a difficult transition.

7.3 Assessing Australia's future relative energy costs and competitiveness

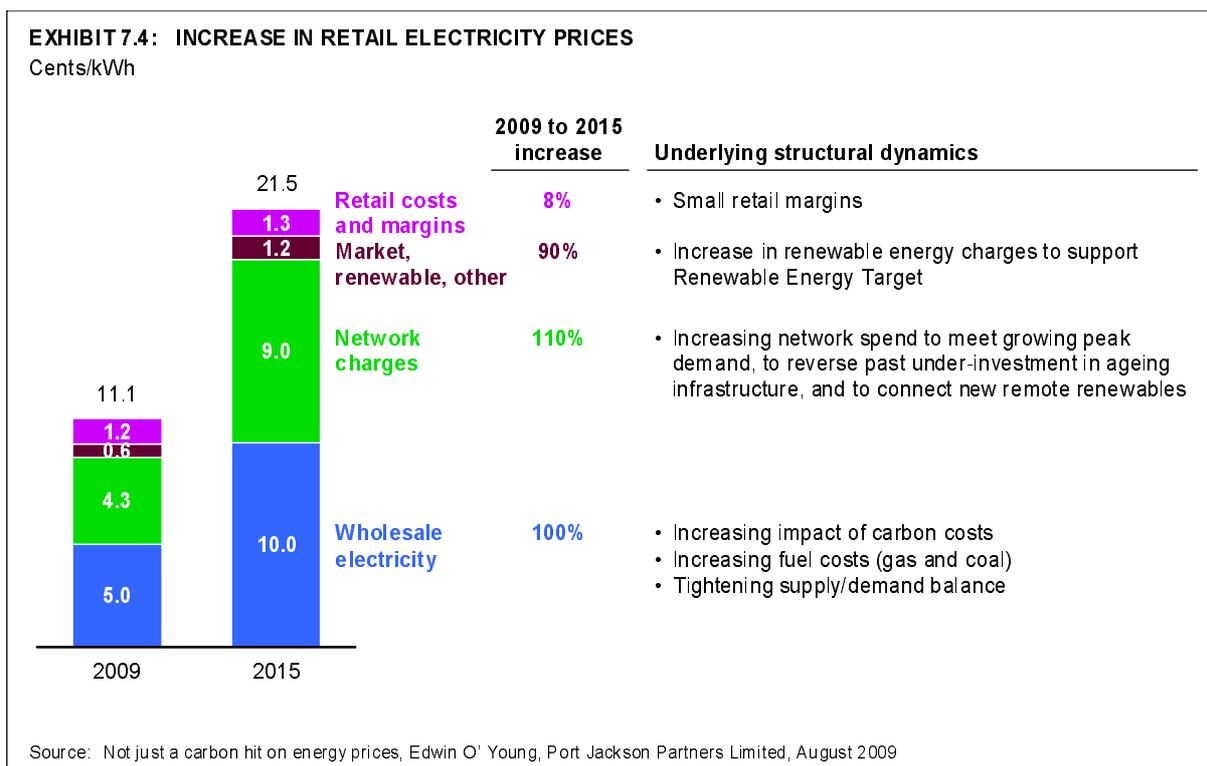
One of Australia's key sources of competitive advantage has been low cost energy. Electricity prices in Australia are likely to increase significantly over the next 5-10 years, and Australia may lose this advantage. This section argues that the coming Energy White Paper is an ideal opportunity to look at Australia's competitiveness as we move to a low greenhouse gas emissions economy, and determine what further steps we can take to maintain our competitiveness (see Exhibit 7.3).

EXHIBIT 7.3: AUSTRALIA'S FUTURE RELATIVE ENERGY COSTS AND COMPETITIVENESS	
Key concerns	Proposed responses
<ul style="list-style-type: none"> • Retail electricity prices likely to double by 2015 due to: <ul style="list-style-type: none"> – CPRS – Expanded RET – Rising gas prices – Huge network capex spend • Other potential electricity price influences: <ul style="list-style-type: none"> – The growing mix of intermittent wind generation and high heat rate gas peaking plant – The need for extensive new transmission links to accommodate the RET – Many ad hoc energy efficiency measures – Rising generation capital costs through commodity prices, financing costs • Australia may not be well positioned to maintain its energy cost advantage over its competitors 	<ul style="list-style-type: none"> • Crucial role for Energy White Paper <ul style="list-style-type: none"> – Undertake scenario modelling to assess effects on our current low energy cost advantage – Canvass the best policy responses • The Energy White Paper should, inter alia: <ul style="list-style-type: none"> – Look to early RET phase out – Inform the nuclear debate – Construct cost curve of energy efficiency measures to allow transparency – Consider other policy responses beyond the narrow remit given to the AEMC

7.3.1 The more visible drivers of increases in electricity prices

A recent paper by Edwin O'Young⁴⁷ of by Port Jackson Partners Limited indicates that retail electricity prices will likely double by 2015 (see Exhibit 7.4). This price increase is due to increases in a surprising number of components of the cost of energy.

⁴⁷ *Not just a carbon hit on energy prices*, Edwin O'Young, Port Jackson Partners Limited, August 2009.



- Wholesale electricity prices make up around 45% of a typical business electricity bill and they could double over the next five years.
 - The CPRS will put a price on carbon and cause wholesale electricity prices to increase by ~60% under the Government's CPRS-5 scenario in 2015.
 - Gas (LNG) prices in eastern Australia will rise to reflect world export parity levels, and could see price increases of 25% by 2015 (note that some argue that east coast gas prices could increase by much more than this, and others argue the opposite)
 - Coal prices will also likely rise as world demand for coal recovers
 - There may also be a tightening supply-demand balance in the wholesale electricity market. This is because, despite many sites being permitted, generators are holding back from investing in new plant under the current uncertain investment requirement.
- Network charges make up around 40% of a typical electricity bill and they could double by 2015. Increasing investment in networks reflects rising demand and increased reliability standards. As an example, recent regulatory determinations in NSW and the ACT have approved an 80% increase in capital investment in electricity distribution networks to 2014 and an increase in allowable revenue caps of up to 88%.
- Renewable energy charges could increase by over three times by 2015 in order to meet the requirements of the Government's expanded RET scheme. The shortfall charge on Renewable Energy Certificates will also increase from \$57/MWh to \$93/MWh.

Calculations by Edwin O'Young also indicate that the likely increase in electricity prices will have a surprising and perhaps unexpected impact on business and consumers. For a typical retailing business, for example, where electricity is only, say, 0.7% of costs and with a profit margin of 7%, the doubling of electricity costs would see profits fall by 10% unless there is some mitigation or pass-through. Across the \$240 billion retail industry, this cost increase could be worth ~\$1.8 billion. There will be many business sectors similarly affected that are probably not anticipating such an impact. This is not to say most businesses cannot pass these

costs on or improve energy efficiency; it is simply to highlight how widespread the effects will be.

7.3.2 Some less visible drivers of increases in electricity prices

While Edwin O'Young's analysis factors in the more visible and certain factors, there are other factors which could also affect electricity prices. They are much harder to quantify as it is unclear how they will play out.

First, it is likely that over the next few years most generation investment will be in intermittent wind generation and supporting gas peaking plant, not baseload plant. This will embed 4-5 times the current level of high cost wind generation (only made viable by the RET subsidy over and above the carbon price under the CPRS) and much more than usual peaking plant that has a high heat rate compared to baseload gas-fired plant (it uses much more gas to produce the electricity).

As indicated above, the AEMC has said that the NEM spot market cap "may require significant upward adjustment over time to ensure that the necessary new entrant plant is economically viable". This increase would significantly be in addition to the increase from \$10,000/MWh to \$12,500/MWh already agreed to.

Second, it is expected that there will be significant demand for new renewable generation connections in remote areas as a result of the expanded RET. The AEMC argues that the existing bilateral negotiation framework for connections is unlikely to support coordinated, efficiently-sized investment. There is the problem under the current system that there may not be the incentive for network service providers to build network connections to an efficient scale to manage expected future connection due to stranded asset risks. There is also a risk of inefficient duplication in network assets and potential delays in connection. There may therefore be large costs to customers due to these inefficiencies.

AEMC's recommendation is to introduce a new framework in the National Electricity Rules (NER) for the planning, pricing and funding of transmission investment in remote areas to create connection "hubs" in specific remote areas. This would allow for Network Extensions for Remote Generation (NERGs). They want to ensure that extensions to the network are sized efficiently for future generation needs, so that efficiency cost savings can be maximised.

Under the new framework customers would underwrite the capacity in excess of the requirements of the first connections. This is because customers are expected to be the ultimate beneficiaries of the resulting economies of scale. The NER will require that prices for NERGs apply the regulated rate of return and are set with the expectation that the generators will pay for all of the assets. Customers will be exposed to the cost of the NERGs if generators arrive later than expected, or are not installed.

Third, Australia has and will mandate a wide range of energy efficiency measures with unknown costs.

The arguments for mandatory energy efficiency measures are sound in that there are apparently measures that save consumers money but which are not being adopted because, for example, consumers are not aware of them. Energy efficiency is, however, deemed to be

appropriate without there always being a full assessment of the costs and benefits of each new measure.

In July 2009 COAG agreed to the National Partnership on Energy Efficiency. This ten-year strategy aims to accelerate energy efficiency improvements for householders and businesses across all sectors of the economy. The agreement sets out an extensive set of measures in a 32 page document⁴⁸ covering four themes:

- Assisting households and businesses to transition to a low-carbon future
- Reducing impediments to the uptake of energy efficiency
- Making buildings more energy efficient
- Government working in partnership and leading the way.

The timing of each measure will be determined as part of individual implementation plans. The agreement notes that implementation plans will identify the need for regulatory impact statements where appropriate. Some of the measures identified in the plan are specific, e.g. phase out incandescent light bulbs, starting with a ban on imports, followed by retail sales bans. Other measures require the development of standards or codes of best practice.

One potential problem is that these measures may be imposed without sufficient transparency as to their cost per megawatt saved. Another problem is that the measures are being implemented one at a time, and have not been prioritised in a cost-benefit sense, which would allow measures to be implemented based on their cost effectiveness.

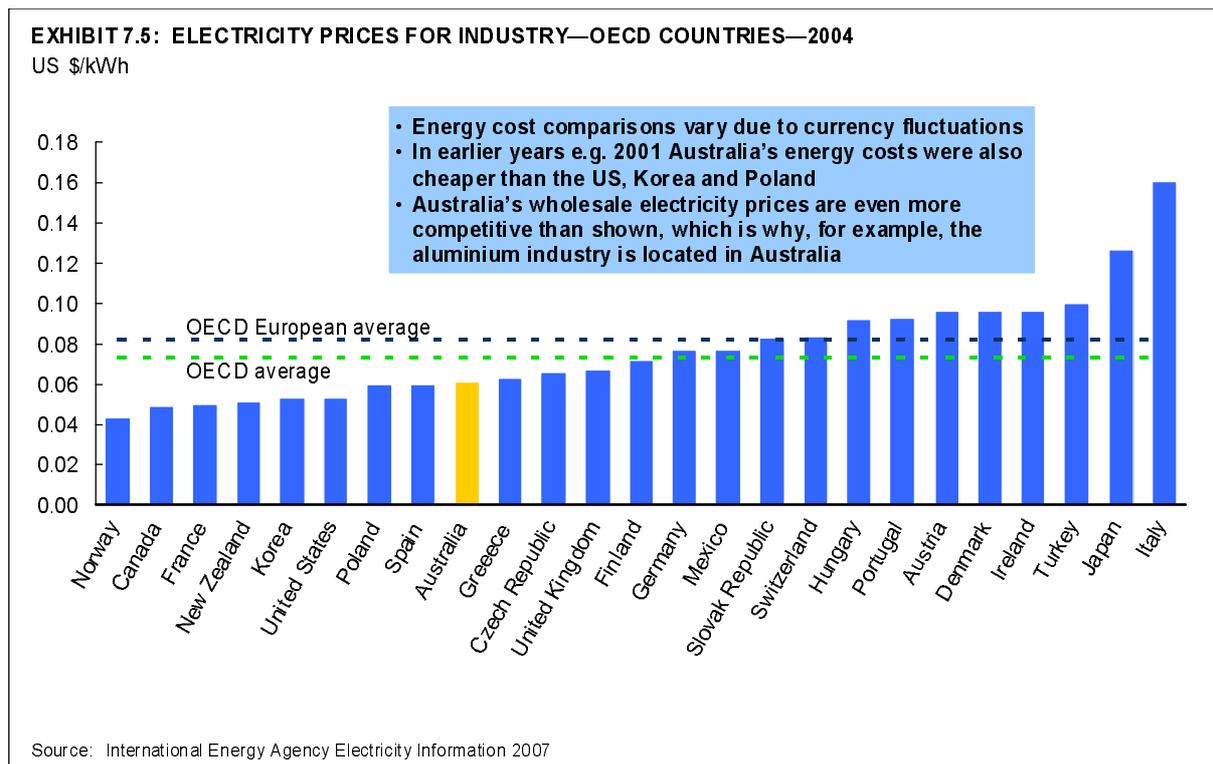
Finally, it is often not appreciated that over half the costs of electricity generation are in the capital costs, not the fuel and operating costs. Not only have capital costs risen in recent years with rising commodity and construction prices but the cost of finance, both debt and equity, has risen significantly with the recent financial crisis.

The above factors are hard to quantify but their effects can be significant.

7.3.3 The threat to Australia's competitive advantage in low energy costs

Australia has enjoyed low cost energy. Exhibit 7.5 shows that Australia's energy costs remain some of the lowest in the OECD. Energy cost comparisons vary due to currency fluctuations, and in earlier years, for example 2001, Australia's energy costs were also cheaper than the US, Korea and Poland, though they have now risen slightly.

⁴⁸ *National Strategy on Energy Efficiency*, Council of Australian Governments, July 2009.



This low cost energy base has been largely due to an abundance of low cost coal, particularly brown coal which cannot be exported. Australia also has some captive black coal which was not located in areas suitable for easy export, and so has been used for domestic electricity generation. Australia has also had gas on the east coast which did not access world gas prices. The result of this combination of energy sources has meant that Australia's energy prices have been effectively pegged by the coal price.

Since brown coal-fired electricity generation is by far the most carbon intensive form of generation Australia's low cost energy advantage is under direct threat. There are other factors to weigh in assessing our future comparative advantage in low cost energy.

- Our low east coast gas prices will soon link to much higher world levels with some of the Queensland LNG projects likely to proceed
- Wind powered generation cannot provide baseload capacity due to its intermittent nature. A wind powered economy would not, however, provide Australia with a competitive advantage over the many other countries also using wind power.
- Australia has the world's largest uranium reserves, but uranium is likely to be sold internally and externally at world prices as Australia's uranium stocks are not located near large demand loads. There is also currently a domestic ban in place on using nuclear fuel for electricity production. It is possible that this may become a problem if nuclear power becomes the lowest cost form of low carbon fuel for the world.
- Australia is ideally placed for solar power, with our abundant sunlight and large open spaces. Solar power is, however, currently very high cost, (over \$220/MWh versus \$50/MWh for gas-fired electricity), and it is not clear how quickly this will change.
- Geothermal power is a promising technology, but it has not yet solved all its technical issues and so is not commercially available. It would also see similar problems to wind power, in terms of needing very long transmission lines, with the associated losses, to reach demand centres.

- Carbon capture and storage is not yet a proven technology. If it does become commercially viable, however, this may help Australia retain its competitive advantage if it is proved to be lowest cost source of low carbon emitting fuel.

7.3.4 A possible response

The energy market is complex. There are no doubt some factors which will offset the above points, and it is not the purpose of this paper to make future comparative energy price estimates. Indeed, the point being made here is that this is a role of government.

COAG seems aware of these issues to a large extent. The Communiqué from its 30 April 2009 meeting says ... “COAG also tasked the MCE with providing a report by the end of 2009 on expected electricity price rises over the next three years, identifying the major component of these price rises”. This is a welcome first step.

The Commonwealth has undertaken to develop an Energy White Paper. The aim of the White Paper is to “set durable policy directions to ensure Australia’s long-term economic prosperity and energy security”. Part of this is looking at how Australia meets its increasing demand for energy during the transition to a low carbon economy. The Energy Green Paper is now expected to be released in late 2009.

The Energy White Paper is an excellent and timely initiative that can undertake a wide range of scenario modelling to assess all of the above factors in a systematic way. Indeed, at a minimum, the White Paper can answer the following fundamental energy questions:

- What is the range of scenarios for Australia’s future electricity and overall energy costs over the next decade?
- How will this likely affect Australia’s cost of energy relative to that of our competitors?
- What will the implications of these shifts be for Australia’s economy?
- What steps should Australia take to improve its relative energy cost position?

There are at least two benefits from the above. The first is to inform planning, both for business and for policy makers. The second benefit is to provide an impetus to policy in what are very difficult policy areas.

There are several additional difficult energy policy areas that require attention.

First, the RET is universally popular policy, and it enjoys support from the two major political parties. It is also very bad policy. In essence, what it does is to mandate that around, say, 15% of Australia’s future energy needs will likely come from wind power even though the whole point of the CPRS is meant to provide a general price signal to allow Australia to move to a low carbon economy in the most efficient way. Virtually every major study has called for the removal of the RET once there is a meaningful general carbon price, from the Productivity Commission to the Garnaut Review. The Energy White Paper can help inform us more of the full consequences of the expanded RET, and it can add a more powerful voice to its eventual phase out.

Second, the debate about nuclear energy must be commenced. While there are many concerning issues with nuclear energy Australia must debate these, and do so in the context of

what the rest of the world is doing. Whatever decisions we take as a nation must be well informed.

Finally, the Energy White Paper is also our opportunity to construct the cost curve of energy efficiency measures referred to above so we can see how much energy is expected to be saved and at what cost. Such transparency would be an indispensable guide to future policy in this area. This cost curve should be based on the cost per electricity demand saving for each government program looked at individually and collectively (to highlight any double counts in estimates of demand reduction). This will help to assess and prioritise the future work program being developed under the National Partnership on Energy Efficiency.

7.4 Pursuing the remaining electricity reform agenda to improve market efficiency

The existing reform agenda has understandably been overshadowed by the CPRS, but it is now even more important and should be given due focus. Governments have an unfortunate history of opting for the easier changes and avoiding the difficult ones. The changes implemented following the Parer Review and the Energy Reform Implementation Group (ERIG) have been largely governance changes. Other key recommendations have rarely been acted upon. Given the importance of Australia's adaptation to a low carbon future and the transition required under the CPRS, it is more important than ever that COAG undertakes the serious and difficult reforms remaining (see Exhibit 7.6).

EXHIBIT 7.6: THE REMAINING ENERGY REFORM AGENDA TO IMPROVE MARKET EFFICIENCY	
Key concerns	Proposed responses
<ul style="list-style-type: none"> We need less political, more flexible arrangements for increasing retail electricity prices 	<ul style="list-style-type: none"> Remove price caps, or let AER be responsible for them with uniform methodology
<ul style="list-style-type: none"> Particularly as we seek to improve energy efficiency we need a faster timetable for the rollout of two-way meters, intelligent networks 	<ul style="list-style-type: none"> All governments commit to follow the Victorian example at a minimum
<ul style="list-style-type: none"> There remains a bias to State-based transmission planning (will the National Transmission Planner assist here?) 	<ul style="list-style-type: none"> Efficient MCE consideration of the AEMC's recommendation for load export charging
<ul style="list-style-type: none"> There is a continuing need for improved regional and locational signals, but much more so now with the CPRS and expanded RET 	<ul style="list-style-type: none"> Efficient MCE consideration of the AEMC's recommendations for congestion pricing mechanism and also generation TUOS
<ul style="list-style-type: none"> There is now increased urgency to allow retailers to offset their spot and contract exposures with AEMO 	<ul style="list-style-type: none"> MCE deal with this issue with more urgency
<ul style="list-style-type: none"> The end of the NSW ETEF arrangements keeps being deferred 	<ul style="list-style-type: none"> NSW set and stick to a firm date for removing ETEF

7.4.1 Price caps

AEMC Reviews of retail competition

At the May 2007 MCE meeting the Ministers directed the AEMC to commence its review on the effectiveness of retail competition. It was announced that the AEMC would conduct

sequential assessments commencing with Victoria in 2007, followed by South Australian in 2008, NSW in 2009 and ACT (if required) in 2010. In July 2009 that schedule was extended to cover the ACT in 2010, Queensland in 2012 and then Tasmania in 2013, if full retail contestability has been implemented in that jurisdiction at that time.

The AEMC has completed reviews of the effectiveness of competition in Victoria and South Australia and recommended that price regulation stop in both those states. As a result of those reviews Victoria moved to a price monitoring regime, but South Australia decided to maintain regulated pricing for electricity and gas. NSW has deferred its review scheduled for 2009 until 2011.

AEMC price change frequency recommendation

There is expected to be more uncertainty and volatility in carbon-inclusive wholesale energy costs under a CPRS. If financial instruments to hedge these risks are slow to emerge, the viability of retailers and competitive energy markets may be put at risk. The AEMC feels that the CPRS could mean that the development of a competitive and efficient retail market could be inhibited.

The AEMC recommends that there should be more flexibility to adjust regulated tariffs (in those jurisdictions with regulated tariffs) with the introduction of the CPRS. They recommend that all jurisdictions with regulated tariffs have in place an adjustment mechanism which:

- Can be invoked as often as every six months (subject to a cost change threshold)
- Can allow adjustment for increasing or decreasing costs
- Can be initiated by retailers where costs are rising.

COAG amended the Australian Energy Market Agreement (AEMA) in July 2009 for the pass-through to regulated retail tariffs of both carbon costs under the CPRS and costs associated with the expanded RET.

AER retail price regulation?

If price caps are retained, Governments face two choices: resist retail price increases and see restricted generation investment and put retail businesses at risk; or wear the political consequences if price rises are implemented. Governments will face the political consequences even if prices are set by an independent body such as IPART in NSW.

Given this dilemma, it seems sensible either to allow the AEMC process to progress, and remove retail price caps, as has been the case in Victoria, or let the AER set regulated retail tariffs based on a uniform methodology. The advantage of allowing the AER to set the retail tariffs is that it is then removed from the political process.

Under the December 2003 MCE agreement on the Reform of Energy Markets, it was agreed that the AER would be responsible for all distribution and retail regulation, other than retail pricing. It was announced in 2006 that retail price control would be retained by the States and Territories unless they choose to transfer such arrangements to the AER.

7.4.2 Smart (two-way) meters and intelligent networks

The 2002 Parer Report⁴⁹ recommended the roll-out of smart meters for contestable customers in the NEM. In February 2006 COAG committed to the progressive national roll-out of 'smart' electricity meters from 2007. The roll-out was to be only where benefits outweigh costs for residential users and in accordance with an implementation plan that has regard to costs and benefits and takes account of different market circumstances in each State and Territory. Since then progress has continued to be extremely slow. In addition, there has been a growing interest in intelligent networks for the improved management of distribution grids.

The benefits of smart meters and intelligent networks include:

- Wide development of new retail products, such as time-of-use tariffs or direct-load control, which could lead to increased retail competition
- Network management benefits, such as outage management (quick identification of fault location), quality of supply monitoring and an improved understanding of consumption patterns
- Avoided metering costs, such as meter reading
- NEM market management issues, such as settlement of profiles
- The potential for consumers to reduce and manage their bills through increased energy efficiency.

The MCE released a Smart Meter Decision Paper in June 2008 which followed release of the cost-benefit analysis earlier that year. That paper stated that “estimates of the quantified net benefits nationally for the highest-value option, a distributor-led-roll-out... range between \$146 million and \$4.6 billion”. They further stated that the “cost-benefit analysis findings strongly support the benefits of an accelerated, or mass roll-out approach in comparison with a new and replacement smart meter program”.

In June 2008 the MCE committed to development of a consistent national framework for smart meters in the National Electricity Market, supporting distributors to be responsible for the roll-out of smart meters. At that time it was announced that smart meters were to be rolled-out in Victoria and NSW, with over 5 million smart meters expected to be deployed before 2017. Queensland and some other states and territories agreed to undertake extensive pilots and business cases prior to a further national review of deployment timelines in 2012. In July 2009 the MCE further noted that Queensland intended to provide a timetable for implementation of a smart meter pilot to MCE by the end of July 2009 and that Western Australia is actively considering the way forward for smart meters.

7.4.3 Transmission planning

State-based rather than national transmission planning is a long running issue. While the existing Rules, for example, provide for inter-regional transmission charging, this is via negotiation and agreement between the governments for the regions. Only Victoria-South Australia has an agreement in place. The absence of such agreements means that customers do not contribute to costs of transmission assets in other regions, even if they benefit from

⁴⁹ *Towards a Truly National and Efficient Energy Market*, COAG Energy Market Review, December 2002.

them. This is inconsistent with the NER requirement to charge customers based on usage within the region.

The introduction of the CPRS and expanded RET is likely to increase demand for new inter-regional transmission lines. This is because renewable generation is likely to be concentrated in specific regions. The AEMC is concerned that an increase in inter-regional flows without a systematic inter-regional cross-charging arrangement may lead to greater cross subsidies between regions and less cost-reflective pricing.

The AEMC's recommendation is to introduce an obligation on transmission businesses to levy a "load export charge" on the transmission business in each adjacent region. This charge would reflect the costs of providing transmission capacity to transport flows to the adjacent region. The load export charge would be billed to the transmission network service provider (TNSP) in the region electricity flows into. Load export charging would not change a TNSP's total permitted revenue, just how it is collected. The AEMC recommends that the load export charge be implemented from 1 July 2011.

7.4.4 Improved regional and locational signals

This is another longstanding issue. In its recent report, the AEMC considers that there is a high likelihood that there will be increased congestion and its associated economic costs as a result of the expanded RET and to a lesser extent, the CPRS. Congestion is likely to be material and more persistent under the CPRS and expanded RET, with northern South Australia likely to experience high levels of supply-driven congestion.

In order to manage congestion, generators need to have the right financial incentives on how to use the network, where to locate new capacity, and where to retire existing capacity. Existing signals faced by generators do not reflect the total costs imposed on the network by a new location or a retirement decision. Regulated networks also need incentives to operate and invest in networks over time.

The AEMC considers that many aspects of the current framework are robust enough to cope with the changes due to the expanded RET and CPRS, but that potential inefficiencies could be material if the existing framework is continued with no changes. The AEMC's recommendation is to introduce a form of generator transmission-use-of-system charge (G-TUOS) for all generators. The charge would be:

- Reflective of the forward-looking long-run incremental network costs at a particular location
- Calculated as a fixed charge per kilowatt of generating capacity
- Set on an annual basis
- Revenue neutral in aggregate within each region.

They consider that G-TUOS charges provide an efficient cost-reflective signal and can inform both location and retirement decisions for all generators. They are seeking views on how generators should be grouped into zones and on transitional arrangements.

They are also seeking views on whether there is a need for a "complementary short term congestion pricing mechanism". This would focus in particular on a mechanism to address acute, short term areas of congestion. The current arrangements do not provide a pricing

signal to generators within a region. Such a charge would be location-specific and time-limited. Key design features that would need to be settled include:

- Geographic scope
- Duration
- Proportion of a generator's output exposed to the local nodal price
- Allocation of the supporting risk management instrument
- Whether the mechanism applies to all generators or only to new generators.

They have concluded that negotiated financial access to the shared network is not the best way to address congestion.

7.4.5 Prudential issues

In May 2007 the MCE asked its Standing Committee of Officials to develop a work plan to implement the development of options for the integration of spot and forward contract markets (through AEMC, NEMMCO and the ASX). The benefit is that retailers would be required to lodge much less capital with AEMO as their spot and contract exposures would be netted out.

In June 2008 Ministers noted progress on work being undertaken to improve the efficiency of energy related financial markets, including reducing prudential costs for electricity market participants. Ministers welcomed the establishment of an expert working group and advice that it had under evaluation the scope for reducing the settlement cycle in the national electricity market and the option of establishing a single central clearing facility for financial and spot market positions.

In July 2009 Ministers agreed to the Terms of Reference for a review of prudential and related financial arrangements in the National Electricity Market, to be undertaken by AEMO. Ministers expect this to be completed by the end of 2010.

With likely increasing volatility in the spot market these issues have a renewed urgency.

7.4.6 ETEF

The Electricity Tariff Equalisation Fund (ETEF) commenced operation on 1 January 2001, and its goal was essentially to mitigate the cost to state-owned electricity retailers of having to supply electricity at a fixed price to 'non-contestable' customers who were on a fixed tariff in a volatile wholesale market. The problem is that it blunts the signals to build peaking generation, and it provides an unfair competitive advantage to Government owned-energy companies.

Under a 2006 plan, the phasing out of ETEF was to begin in September 2008, and would be gone completely after June 2010. There were five phases of 20% decreases in the amount of regulated load covered. In August 2008, the government announced a change to this plan and deferred the September roll-off.

On 10 July 2009 the NSW Government cancelled the scheduled September 2009 and March 2010 ETEF roll-offs and in September 2009 it announced that ETEF will be extended until 30 June 2011.

The above list of energy issues under continuing consideration by governments illustrate that even widely researched and supported changes take considerable time. With the introduction of the CPRS and the expanded RET, and the other changes that will affect Australia's energy market, the reform effort needs to be intensified.

* * * *

From all of the above it is clear that electricity policy will need to be a continuing high priority focus for at least the Commonwealth Government in the immediate years ahead

ADDENDUM:**Australian Energy Market Commission (AEMC) Review of Energy Market Frameworks in light of Climate Change Policies – Final Report**

The AEMC released the Final Report of its Review of Energy Market Frameworks in light of Climate Change Policies as we were going to press. While the justification for and broad direction of their recommendations has not changed, some of their specific recommendations have changed between the 2nd Interim Report (on which the commentary in our report is based) and the Final Report. We present here a very brief overview of the relevant key changes in recommendations between those two reports.

Improved regional and locational signals on the network

The AEMC's recommendations in this area (referred to in Section 7.4.4 of this report) are trying to achieve the same outcomes, but in a slightly different way. They have made their recommendations less specific, and now propose further development of the detailed implementation plan by the end of 2010, including further consultation with stakeholders.

They still recommend that a transmission charge should be introduced to signal network costs to generators, particularly the extent to which the costs vary by location. They have changed their position slightly from recommending the introduction of a form of generator transmission use of system (G-TUOS) charge for all generators to recommending a locational transmission charge, but not yet specifying the form of the charge. They do note, however, that they continue to prefer a use of system charge over other systems.

Connecting generation clusters

The AEMC has changed its language in this area (referred to in Section 7.3.2 of this report) from recommending a new framework be introduced to the NER to allow for Network Extensions for Remote Generation (NERGs) to Scale Efficient Network Extensions (SENEs). They have also recommended that the policy for SENEs should be reviewed after five years.

Regulated retail prices

The AEMC has added a "transparent materiality threshold" to their previous recommendation for more flexibility in the retail price setting frameworks (referred to in Section 7.4.1 of this report). They have also added a recommendation that the MCE review the current timetable for AEMC retail price competition reviews so that jurisdictions are able to make informed decisions regarding the continued need to regulate tariffs before the full operation of the CPRS in 2012.

Generation capacity in the short term

The AEMC continues to recommend expanding the set of options AEMO can call on to manage reserve shortfalls (referred to in Section 7.2.2 of this report). They have, however, decided not to pursue two of the specific reserve contracting options they had outlined in the 2nd Interim Report, namely prolonged target reserve and standing reserve. They have also decided not to pursue the load shedding management mechanism canvassed in that report.

CHAPTER 8

GAINING THE MAXIMUM PRODUCTIVITY BENEFIT FROM BROADBAND COMMUNICATIONS

Chapter 8: Gaining the maximum productivity benefit from broadband communications

8.1 Introduction and overview

The communications revolution that is the internet and mobile technology enabled profound changes in the way we all live and work. The productivity potential of appropriate communications policy and investment is profound.

In our past work for the BCA in “Revitalising Infrastructure Reform” (September 2007), we observed that Australia’s broadband speeds and penetration levels did not compare well with our economic peers. We said that:

“... the world is moving to high penetration levels of very high speed broadband, and Australia must quickly examine the benefit of doing this as well... We need a policy framework that can stimulate the investment required to match a clear view of the productivity and innovation advantages available from higher broadband speeds ...”⁵⁰

The development of a policy framework for high speed broadband in Australia has been the focus of considerable public debate over recent years and there have been a range of different proposals considered. This chapter outlines the process up to the current National Broadband Network (NBN) proposal, and suggests a broad way forward based around the implementation study that is currently underway. If handled well, Australia can emerge with a sound policy and investment framework and be able to reap high productivity gains from the continuing communications revolution. The issues covered in this Chapter are summarised in Exhibit 8.1.

⁵⁰ *Revitalising Infrastructure Reform*, in Infrastructure Roadmap for Reform, Business Council of Australia, September 2007

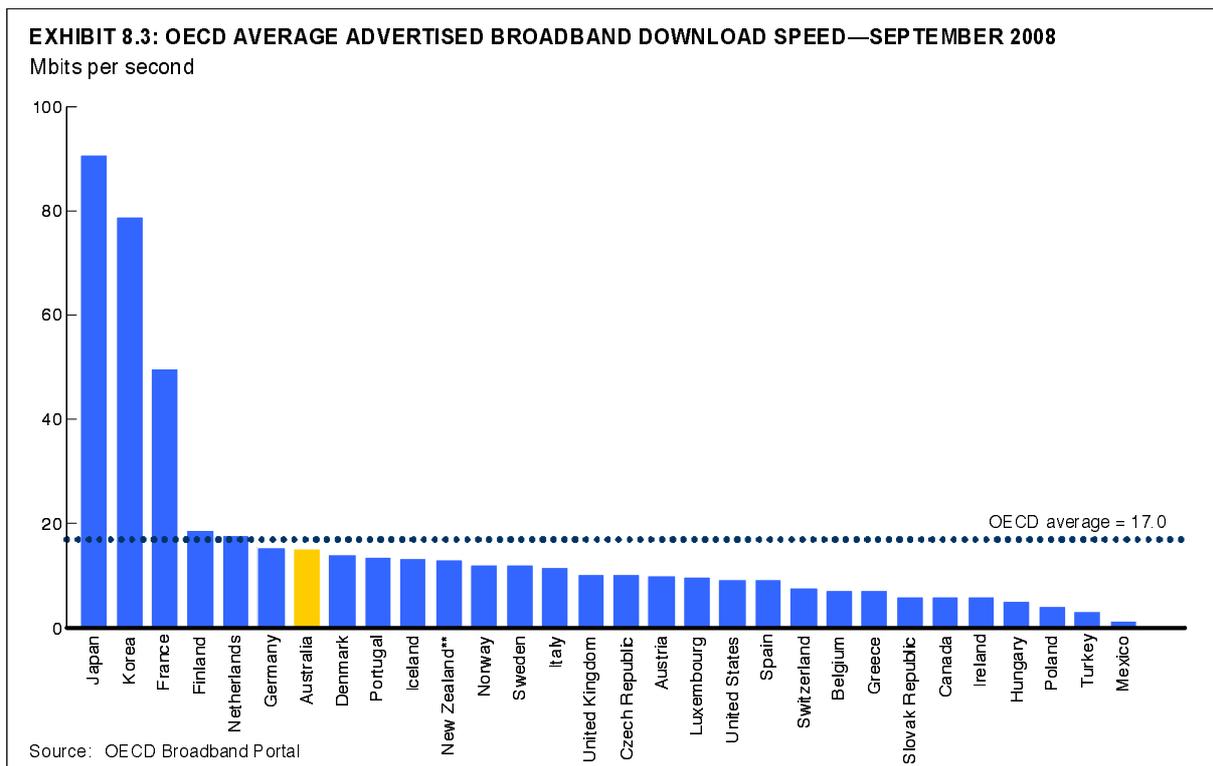
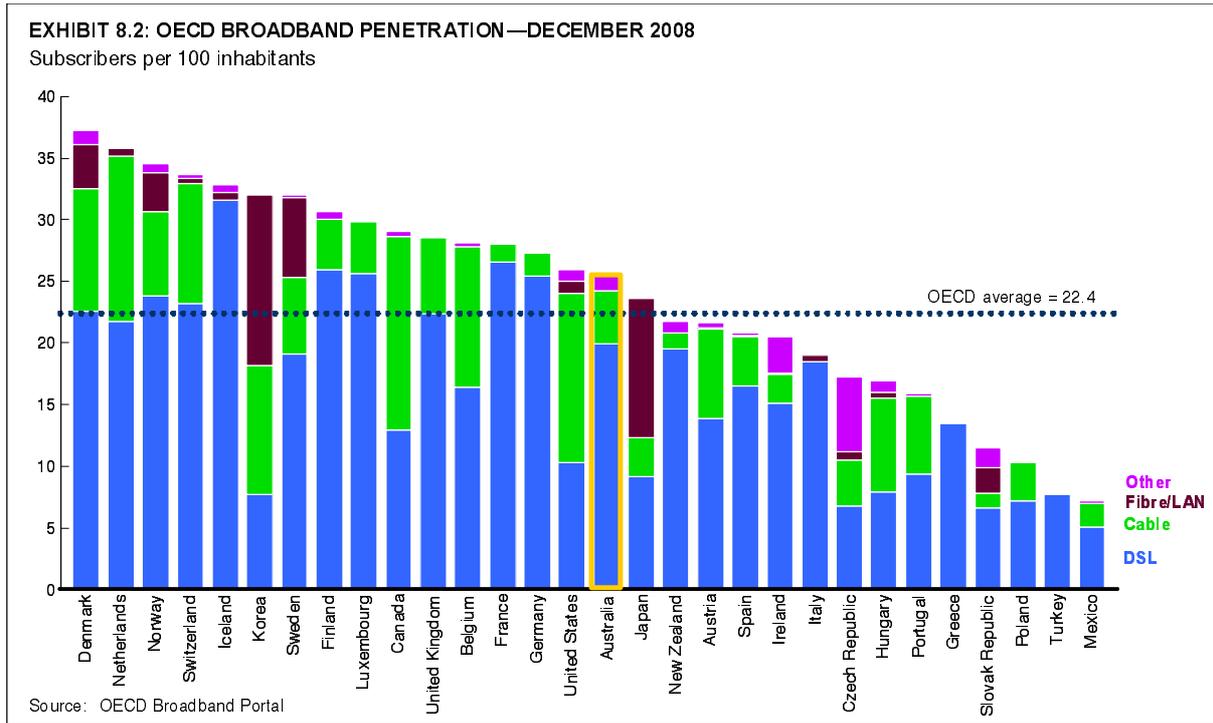
EXHIBIT 8.1: COMMUNICATIONS—OVERVIEW	
Key concerns	Proposed way forward
<ul style="list-style-type: none"> • NBN policy announcement without any supporting analysis • Potential conflict of interest in the Government being promoter and owner of the NBN as well as establishing the regulation framework for it • The future competition regime for telecommunications is unclear <ul style="list-style-type: none"> – Will the NBN be the dominant network, or part of a competitive wholesale market with multiple technologies? 	<ul style="list-style-type: none"> • Use the implementation study process currently underway to: <ul style="list-style-type: none"> – Explicitly define the aim of the NBN roll-out (what are we trying to achieve?) – Perform a detailed cost-benefit analysis of the NBN, including an assessment of the investment case for the proposed plan and of alternative approaches – Consider the optimal timing, scale and specification of any roll-out – Examine the productivity benefits arising from a broadband roll-out – Consider the appropriate regulatory regime for the NBN, including the competition regime • The Government should keep an open mind and not feel bound to follow previous announcements if the results of the implementation study suggest a better approach • At a minimum, there must be competition from wireless, and any new technologies

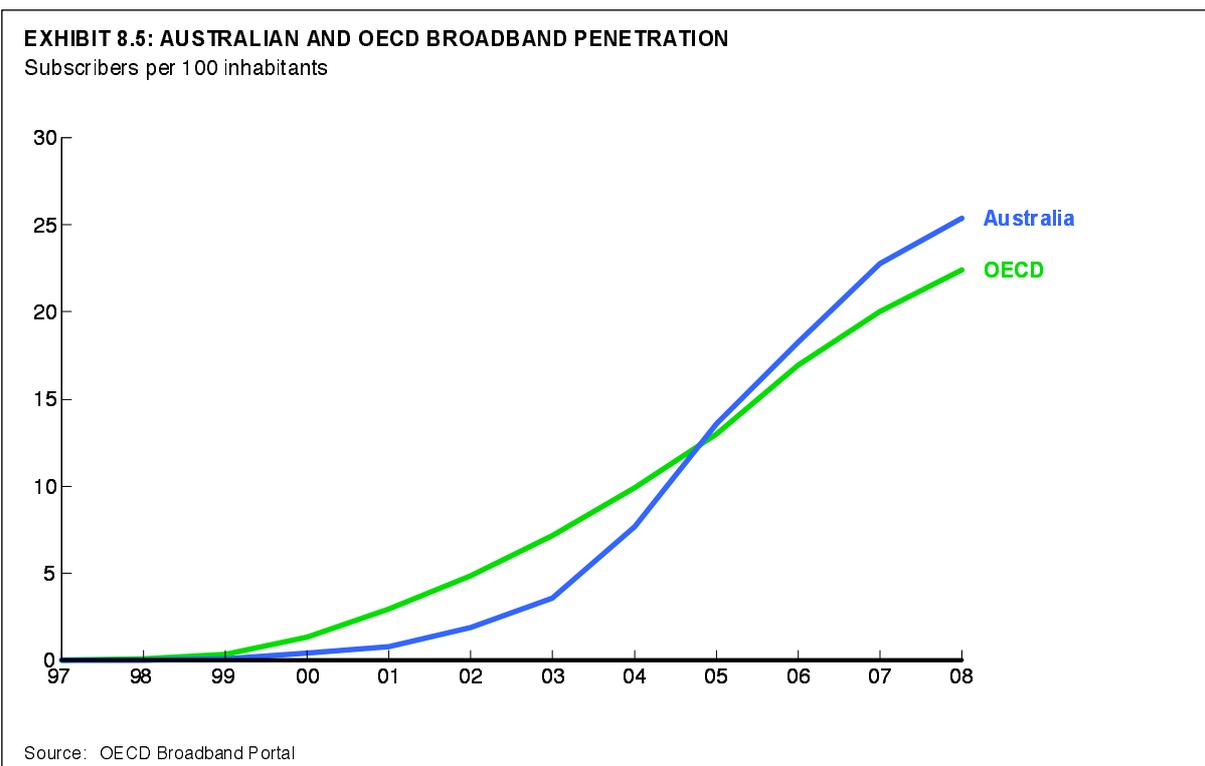
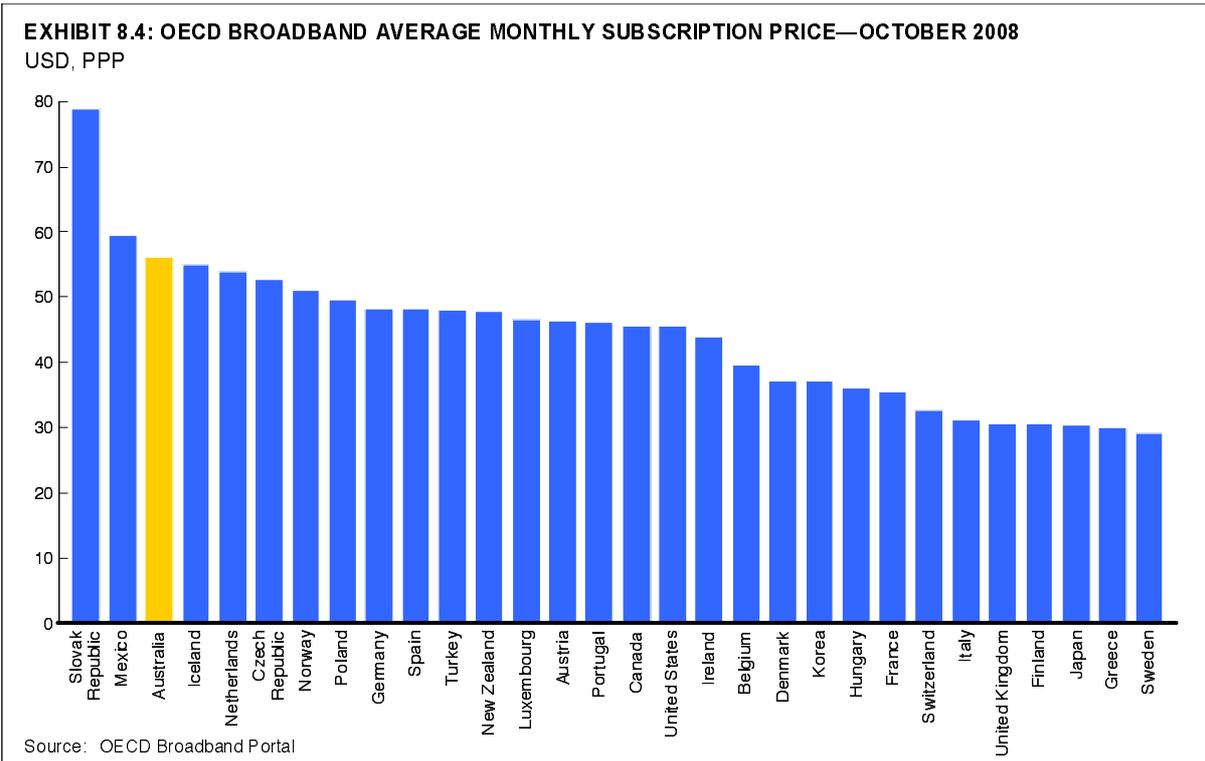
8.2 Australia's recent broadband performance

Australia ranks 16 in the OECD for broadband penetration, with 25.4 broadband subscribers per 100 inhabitants (see Exhibit 8.2), and Australia's broadband is made up largely of DSL technology. Australia ranks seventh in the OECD for average advertised broadband download speed, with an average speed of 15.2 Megabits per second (see Exhibit 8.3). It can be seen from Exhibit 8.3 that Japan and Korea have by far the highest download speeds, and from Exhibit 8.2 that they are the countries with the largest proportion of Fibre/LAN technology.

Significantly, Australia has the third highest monthly average subscription price in the OECD for broadband, and only the Slovak Republic and Mexico have higher prices (see Exhibit 8.4).

It is also important to note that broadband take-up in Australia has increased markedly in recent years, rising from just 1.8 broadband subscribers per 100 inhabitants at the end of 2002 to 25.4 at the end of 2008, representing a compound annual growth rate of 55% over that time (see Exhibit 8.5).





8.3 Background to the NBN decision

The lead up to the November 2007 election saw announcements by the two major parties on broadband networks and coverage. The Labor Party's March 2007 commitment was to the roll-out of a new fibre to the node network covering 98% of Australians with a minimum speed of 12Mbps. The remaining 2% of Australians were to have "improved broadband services". It committed to a public equity investment of up to \$4.7 billion.

In June 2007 the then Howard Government announced the Australia Connected program and promised that 99% of Australians would have access to fast affordable broadband with speeds of 12 Mbps by June 2009. It announced that the OPEL (Optus and Elders) consortium was being awarded \$938 million to roll-out a mix of broadband platforms to rural and regional Australia.

In December 2007 the new Minister for Broadband, Communications and the Digital Economy, Stephen Conroy, announced that the Commonwealth Government was committed to building a network covering 98% of Australia with a speed of 12 Mbps. The Minister announced that there would be an "open and transparent process" to determine who would build the network. A Panel of Experts was appointed in March 2008, and in April 2008 the Commonwealth released the Request for Proposals offering up to \$4.7 billion to the successful party, and indicated that it would consider making regulatory and legislative changes as necessary.

While this process was underway the Government announced in April 2008 that the \$958 million broadband network contracted by the previous government with the OPEL consortium would not proceed.

The Commonwealth received six Proposals in November 2008, including from Telstra and Optus. The Panel of Experts met in December 2008, and concluded that Telstra had not submitted a Small and Medium Enterprise Plan, and so Telstra was excluded from further consideration.

On 7 April 2009 the Government terminated the Request for Proposals process altogether on the basis that none of the remaining proposals offered value for money.

On the same day the Government announced that it would establish a new company (NBN Co.) to build and operate a fibre-to-the-home National Broadband Network, which would cost as much as \$43 billion. It would connect 90% of Australian homes, schools and workplaces with broadband with speeds of up to 100Mbps, and the remaining 10% of the country would be connected via wireless and satellite at speeds of 12Mbps. The NBN is to be rolled out over 8 years.

The Government announced that NBN Co. would be at least 51% Government owned, with the remainder owned by the private sector. The Government plans to sell its stake in the company within five years of it being fully operational. Significantly, the proposed network is to be a wholesale-only, open access broadband network.

The NBN roll-out is being fast tracked in Tasmania, and work began in July 2009. At the same time the Commonwealth Government announced a consultative process on changes to the existing telecommunications regulatory regime.

The May 2009 Budget allowed \$53.2 million in 2009/10 for an ‘implementation study’ into the NBN that will “examine detailed engineering, commercial and structural issues” and report by early 2010. The funding is also to be used to support the early implementation of a network in Tasmania, implementation of the regional backbone blackspots program, and development of legislation and a regulatory framework.

In a speech given to the Australian Financial Review Broadband Conference in July 2009 Minister Conroy said that the implantation plan would cover issues such as:

- Pricing
- Future take-up rates
- Exactly how many homes and businesses would be passed or connected
- The mix of aerial versus underground roll-outs,
- The location, indoors or outdoors, of customer equipment,
- The quality of existing assets; and
- The design and specification of access services on the FTTP network.

The implementation study is also to determine operating arrangements for the company to manage the NBN, network design issues, and financial details including those required for attracting private sector investment. KPMG and McKinsey were jointly appointed as lead advisor for the NBN implementation study in August 2009.

8.4 Issues raised in relation to the NBN

There are at least three key issues raised by the proposed NBN: first, the process that has been followed to date in developing the policy; second, the potential conflict of interest in the Government being developer and owner of the NBN as well as establishing the regulatory framework for it; and third, it is not clear what the future competition regime will be for telecommunications.

The policy development process so far

Based on the supporting material made publically available so far it is not yet clear whether a government-backed National Broadband Network is the right way forward for Australia. Senator Conroy has so far rejected the need for a comprehensive cost-benefit analysis of a \$43 billion program: “We do not need any more studies, any more cost-benefit analyses, to know that this is an infrastructure investment that this country is crying out for⁵¹”. In an interview in May 2009 Finance Minister Lindsay Tanner said that the government had made the decision on going ahead with the National Broadband Network despite the lack of a detailed business case because “...we just formed the view that in effect we had to make the clear decision that said this is the outcome we are going to achieve come hell or high water because it is of fundamental importance to the future of the Australian economy”.

Infrastructure Australia also supports the NBN, despite the lack of a cost-benefit analysis, saying in its December 2008 Report to COAG that “the benefits of a fast and accessible

⁵¹ Statement made by Senator Conroy in the Senate on 12 May 2009, Senate, Official Hansard, No. 5, 2009, Tuesday 12 May 2009.

national broadband network to Australia's international competitiveness are almost impossible to overstate." In its May 2009 National Infrastructure Priorities document it also said that "Infrastructure Australia supports an investment from the Building Australia Fund to develop the National Broadband Network".

The problem with this sort of decision making is two-fold: first, is the money committed to the NBN being spent on a project where the benefits outweigh the costs? And second, is it being spent on the best program possible? The money committed to the NBN has a high opportunity cost in terms of other priorities it could be spent on. There is, of course, no shortage of good ideas, or projects or programs on which \$43 billion could be spent (and even if the Government's equity is say, \$10 billion, there is still a \$43 billion commitment of the nation's resources): each person would have their own preferred priorities in health, education, or other infrastructure to name a few.

As noted in Section 1.4.2 in Chapter 1, however, the announcement of a major project without supporting analysis unfortunately also frequently occurs with many other government projects.

Potential for conflict of interest

There is a potential for a conflict of interest in the Commonwealth Government being the promoter, developer and majority shareholder of the NBN, as well as setting the regulatory framework for it. The Government has already, for example, proposed using amendments to telecommunications legislation requiring telecommunications carriers and other utilities to provide 'protected network information' for purposes related to the planning and roll-out of the national broadband network.⁵²

These are always difficult issues for governments. In this situation there will be no shortage of ideas on how to benefit NBN Co to the ultimate detriment of consumers, so the Government will need to proceed with care.

Future competition in telecommunications

It is also not clear what the competition regime will be when the NBN is rolled out. As the BCA has previously noted⁵³, it is not yet known whether the Government intends the NBN to be the dominant telecommunications network or part of a competitive wholesale market.

Competition in the technologically dynamic broadband market in particular is important, more so than in other markets, and banning it by restricting other players from building infrastructure would seem inappropriate. The NBN is not a natural monopoly as, at a minimum, there can and should always be competition from wireless technology.

That said, it will be important to resolve the level of the competition to the NBN in the future wholesale market, once the fibre-to-the node NBN is rolled out. The future of the copper wires, for example, poses a serious question. Should people have the choice between paying

⁵² Telecommunications Legislation Amendment (National Broadband Network Measures—Network Information) Bill 2009, Explanatory Memorandum.

⁵³ Business Council of Australia, Submission to Senate Select Committee on the National Broadband Network, July 2009.

a higher price for faster, fibre-based broadband, or a lower price for slower ADSL via the existing copper network?

8.5 A proposed way forward

The implementation study currently underway offers the perfect, and indeed only, opportunity to answer the key questions concerning the NBN. No significant money has yet been spent on the NBN so the implementation study can shape the way ahead.

It is important that the implementation study be publicly released, so that there is increased confidence in the proposal.

In addition to the issues outlined by the Minister above, the implementation study needs to provide more information. For example, it should:

- Explicitly define the objective of the NBN roll-out. Without defining the policy's objective, it will be impossible to assess it effectively.
- Consider the optimal timing, scale, scope and specification of the roll-out. This should be done on the basis of a detailed cost-benefit analysis of the NBN which should include an assessment of the investment case for the policy as proposed, and also test alternative approaches. A thorough assessment of risks should also be part of this analysis.
- Assess the expected wider productivity benefits arising from the NBN roll-out. The study also needs to assess what else may be required to achieve these productivity benefits.
- Develop roll-out benchmarks and, once established, target service levels for the NBN that can be publicly reported against.
- Consider and recommend the appropriate regulatory regime for the NBN. It is likely that the best way for the NBN to be regulated is as a public utility with regulated access pricing in the same way prices are regulated for electricity and gas distribution networks by the Australian Energy Regulator (part of the ACCC).
- Recommend an appropriate competition regime for the sector. This should, for example, look carefully at the future of the existing copper-based networks as part of the wholesale broadband mix.

Most important, the Government will need to keep an open mind about the future of the NBN, and should not feel bound by past announcements if the results of the implementation study suggest a better approach. Previous announcement about the timing of the roll-out, and the speed and penetration of the NBN need not be adhered to if they are shown to need adjustment.

The likely changes in the market structure as a result of the telecommunications legislation currently under consideration in the parliament, for example, may lead to alternative options that should be considered if they can deliver the government's broadband agenda at less cost.

* * * *

The development of a national broadband network has the potential to affect a wide range of economic and social activities in a positive way. The implementation study that is underway has the potential to allow an excellent outcome if it is handled appropriately.

