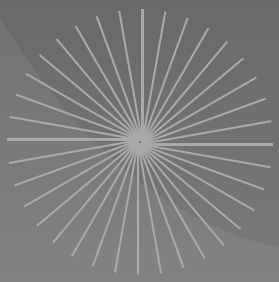
Infrastructure

Action Plan for Future Prosperity



Business Council of Australia

Contents

A report entitled *Reforming and Restoring Australia's Infrastructure* prepared for the Business Council of Australia by Port Jackson Partners Limited in March 2005 accompanies this Action Plan.

Senior political and economic leaders recognise Australia's infrastructure problems.

'These capacity restrictions in terms of infrastructure must be dealt with.'

The Hon. Mark Vaile MP, Minister for Trade,
ABC TV News, 1 February 2005.

'If we don't ensure adequate investment now, we will run into what I call British disease – a horrendous bill to catch up later and an immense impact on people's access and on the environment.'

The Hon. John Anderson MP, Deputy Prime Minister and Transport Minister,
The Weekend Australian, 16 December 2004.

'If the problems of shortages of skilled labour and outdated infrastructure [are] not solved, business [will] not invest in Australia.'

The Hon. Kim Beazley MP, Opposition Leader,
The Sydney Morning Herald, 4 February 2005.

'The general performance of the economy in 2004, when production was unable to keep up with the strength of global and domestic demand, is suggestive that capacity constraints may be becoming more important.'

Reserve Bank of Australia, Statement on Monetary Policy, February 2005.

'The most telling evidence that Australia has a disjointed approach to infrastructure development is the simple fact that no one can readily refer you to a point of reference that accurately defines who is doing what, what levels of expenditure are being committed at a Government level and what comprises the national infrastructure agenda.'

The Hon. Shane Stone QC, former Chief Minister Northern Territory, June 2004.

Executive Summary

The Business Council of Australia (BCA) believes that if Australia is to grow in status as an internationally competitive nation we need a comprehensive national infrastructure reform agenda, supported by processes and structures that ensure greater accountability between Governments on infrastructure planning.

Australia continues to enjoy strong growth. The combination of a high level of employment, low inflation and high asset values has contributed to a rising standard of living in recent years and superior lifestyles for many Australians.

However, the BCA emphasised in its recent *Action Plan for Future Prosperity and Budget Submission 2005–06*[1] that a buoyant future cannot be taken as given.

The durability of Australia's current high economic growth is to be questioned at a number of levels. The Treasury clearly shows that Australia's growth rate has the potential to slow appreciably, largely as a result of demographics and the impact the already growing shortage of skilled labour across the economy is having on operational effectiveness and business growth.

Research undertaken for the BCA by Rod Sims of Port Jackson Partners Limited (PJPL) demonstrates that the current state of Australia's most fundamental infrastructure – supporting all elements of the transport network, energy and water supplies, and the basic facilities to support growing and spreading urban communities – is in urgent need of reform, repair and expansion. We are at the crossroads in terms of infrastructure development as a result of poor institutional arrangements and policy choices.

One of the most significant and interrelated risks for the economy is the adequacy and capacity of Australia's economic infrastructure to support Australia's continued growth and productivity as international competition and trade increases.

Changes are required to alleviate current capacity constraints, and provide additional capacity to support high growth in the years ahead.

Australia's economic growth rate needs to be sustained at, or around, 4 per cent[2] to maintain the level of relative prosperity and living standards most Australians currently enjoy.[3] The BCA believes this can be achieved, but it requires, among other things,[4] a cooperative, long-term national strategy to put planning and funding of infrastructure on a sustainable footing. Infrastructure reform is essential and Governments need to:

– act now to alleviate existing capacity constraints; and
– develop an infrastructure strategy that ensures Australia is one of the top global competitors.

We will not achieve these objectives unless there is structural and systematic change in the governance and planning of infrastructure policy in Australia. A new model of governance that is efficient, disciplined and transparent and removes the institutional conflict and short-termism that exist within and between jurisdictions is an essential pre-requisite.

The BCA is publishing this Action Plan for Infrastructure and its companion report – *Reforming and Restoring Australia's Infrastructure* – to stimulate national debate on what is required to sustain Australia's growth and competitive position.

Key recommendations

Together, Commonwealth, State and Local Governments need to act now to alleviate existing constraints on the nation's infrastructure and develop capacity for future growth:

- **Under the auspices of the Council of Australian Governments (COAG) (COAG reconstituted, or an alternative peak intergovernmental body) develop a national integrated infrastructure reform agenda covering:**
  - urban and rural water, energy and greenhouse, and road and rail transport.
- **Review and strengthen governance and institutional arrangements relating to infrastructure to ensure:**
  - a balance of powers between levels of Government;
  - clear articulation of the roles and responsibilities of each level; and
  - transparent lines of responsibility and disclosure.
- **Ensure the peak intergovernmental body (COAG or alternative):**
  - is accountable;
  - clearly articulates goals for reform, underpinned by a broad set of principles establishing consistency across jurisdictions;
  - develops specific plans and timetables with firm targets for action, and robust mechanisms to prevent backsliding;
  - maintains oversight of implementation of reforms – this authority should not be delegated; and
  - is supported by an independent secretariat with analytical capacity.
- **Maintain incentives for reform and utilise Australia's capacity for economic growth.**
- **Establish independent, transparent and regular assessment, monitoring and public reporting on reform progress, asset performance and condition:**
  - publish an annual state of the nation infrastructure report encompassing all jurisdictions.

1

The reform imperative – cooperative planning for the nation

The BCA's *Action Plan for Future Prosperity* outlined the case for a renewed commitment to reform of the nature and extent that transformed Australia in the 1980s and 1990s and provided the framework for an era of prosperity. Infrastructure planning and coordination has been identified by the BCA as an area requiring urgent reform. While the proposed reform agenda outlined in this Action Plan involves all sectors of the economy – Government, business and the wider community – ultimately Governments must be the drivers, setting policy and coordinating mechanisms that create an environment for essential investment necessary for a prosperous, secure future.

Australia, now more than ever, is open to international competition. The reform process put in place today must acknowledge the changed global environment and advance an international competition reform agenda aimed at maintaining Australia's global status and its ongoing prosperity. This is the path to a sustainable outlook for Australia.

Australia needs an international competition reform framework.

Given infrastructure capacity is a potential brake on sustainable growth, the BCA is calling on Governments, and in particular the Commonwealth Government, to take a more proactive approach to coordination and planning of infrastructure to enhance efficiency and productivity and effect appropriate investment.

The BCA believes significant economic gains will flow from correcting institutional and policy impediments to infrastructure planning and funding. Done properly, such reform wil reduce regulatory burdens and assist in strategic workplace, taxation and welfare reforms.

Shortfalls in the capacity of Australia's infrastructure flow from convoluted institutional arrangements and poor policy choices – not from the demands of higher economic growth or a scarcity of resources or funding.

Within this context, the BCA's core contention is the current and potential shortfalls in the capacity of Australia's infrastructure flows from convoluted institutional arrangements and poor policy choices – not from the demands of higher economic growth or a scarcity of resources or funding.

The BCA considers the infrastructure needed to support Australia's current growth path has not been forthcoming because there is a fundamental lack of transparency and poor understanding of the adequacy, capacity and condition of our infrastructure, both within Governments and across the community. Moreover, processes for national, integrated coordination and planning for future requirements either do not exist or are dysfunctional.

Unclear roles and responsibilities, a lack of integration between policy sectors, funding anomalies, regulatory duplication and political power plays are significant contributing factors.

Our fundamental premise is that acknowledging and remedying inadequacies in the approach to assessment, coordination and planning of economic infrastructure – not funding levels – is the key to Australia's future prosperity.

In addressing infrastructure shortfalls all parties should avoid simplistic debates about levels of funding and single-tier jurisdictional responsibility. Funding is a function of proper planning and strategy, involving a coordinated approach between Governments. Australia is a global competitor, but the national infrastructure on which Australia's economy depends invariably extends across State and Territory borders – with the inevitable cross-over between roles and responsibility of the respective jurisdictions.

Without addressing this fundamental governance challenge, additional funding risks being misallocated or wasted on short-term fixes, while political capital is expended on an ultimately barren debate over which tiers of Government have responsibility for particular or localised infrastructure problems.

In the view of the BCA, the right institutional arrangements and policy signals will encourage investment and improved means of financing for the task of nation building. This would ensure the nation would have a means of devising workable solutions to the plethora of infrastructure issues we face and a more certain path to elicit the necessary decision-making structures and investment to resolve them.

The right institutional arrangements and policy signals will encourage investment and improved means of financing for the task of nation building.

2

The growth imperative

The Commonwealth Treasury has foreshadowed that the Australian economy will face a number of substantial challenges over the coming 20 years, largely as a result of lower natural population growth, an ageing population, and uncertain sources for future productivity growth. Treasury is predicting our rate of growth will slow appreciably,[5] resulting in lower relative living standards, reduced ability to invest in high-quality health care and education and other critical infrastructure, and decreased international competitiveness.

In addition, serious concerns have emerged about the capacity of Australia's infrastructure to support and sustain high growth in the years ahead.

Australia is enjoying a strong economic position, both by its own historical standards and by international comparison. It has been a star performer among OECD nations over the past decade. Australia has recorded an average real growth rate of 3.8 per cent a year since the mid-1990s with the result that GDP in 2004 was 40 per cent higher than a decade earlier. Inflation has remained well below the Reserve Bank's 3 per cent ceiling; unemployment has fallen to around 5 per cent (meaning virtually full employment); asset values have soared to a record high; and overall living standards have risen dramatically.

Australia's outstanding performance over the past decade followed a period of intense policy reforms initiated from the 1980s when the nation was opened to international competition and given the ability to match it.[6]

The BCA, as do most policy makers, legislators and commentators, would like to see Australia continue to outperform other nations indefinitely, because of the benefits high growth has afforded to most Australians. The key question is whether current levels of growth can be maintained, or whether the economy has reached a plateau and is at risk of sliding into decline and settling at a much lower level over the next 15 to 20 years. These possible scenarios – continued high growth versus modest-to-low growth – paint two markedly different pictures of the Australia of the future.

The warning signs have evolved into a consensus among key economic commentators that without a concerted reform program that moves Australia to higher levels of productivity and competitiveness, the nation will move to lower growth, leading to a decline in relative living standards and levels of prosperity.

This view is reinforced by the Commonwealth Treasury, which has foreshadowed the Australian economy will face a number of substantial challenges over the next 20 years, largely as a result of lower natural population growth, an ageing population, and uncertain sources for future productivity growth. Treasury is predicting our rate of growth will slow to around 2.7 per cent,[7] resulting in lower relative living standards; reduced ability to invest in high-quality health care, education and other critical infrastructure; and decreased international competitiveness. More recently, the Govenor of the Reserve Bank of Australia, Ian Macfarlane, said without a major program of economic reform in the near term, Australians should become accustomed to lower growth rates. He singled out inadequacies in economic infrastructure to cope with rising demand as a significant constraint on long-term prosperity.[8]

Between June 1983 and June 2004 Australia added a third to its population, or 4.7 million people.[9] Adding a further third over the next two decades would see our population approaching 26.7 million.

While considerable spending continues to occur within Government budgets, the proportion allocated to renewal and periodic improvement of infrastructure is significant and likely masking the actual expenditure on major new initiatives.

The BCA believes sustaining annual growth of around 4 per cent, although challenging, could be achieved through innovative strategies and policies to:

- maintain population growth at 1.25 per cent a year through relatively high levels of immigration, which would increase the population to 26 million by 2025;
- increase the working age labour force participation rate by around 0.4 per cent a year to lift the current level of 74 per cent to the OECD best practice level of 90 per cent by 2025; and
- increase labour productivity growth to 2.6 per cent a year from the historically high rate of 2 per cent a year that has been achieved in the past decade.

Establishing the right institutional arrangements and infrastructure policy signals will boost GDP and thereby help to maintain competitiveness and prosperity in the face of an ageing Australia and a potentially increasing social welfare cost.

Preliminary work by Port Jackson Partners Limited conservatively estimates the boost to GDP to be in the order of 2 per cent or $16 billion.

3

The infrastructure imperative

Serious concerns have emerged within the last year about the capacity of Australia's physical infrastructure and environment to sustain and contribute to high growth in the years ahead.

Economic infrastructure industries – electricity, gas, water and sewerage, roads, ports, railways and telecommunications – are central to a modern economy. Seventy per cent of the total demand for economic infrastructure comes from Australian businesses that rely on these services to produce and market their outputs and to be leading-edge innovators.[10] The BCA has a vital interest in ensuring the planning, provision and use of infrastructure – its location, availability, quality and pricing – enables the economy to continue to grow and Australia to maintain a high and rising standard of living.

Concerns about the capacity of Australia's infrastructure to allow it to meet demand, particularly from overseas markets, have recently been raised in the context of our economic performance in 2004 when production was unable to keep up with the strength of global and domestic demand.[11] Current and former members of the Reserve Bank have questioned whether these capacity constraints will limit further expansion of the economy. Government Ministers, the Opposition, the OECD and the Productivity Commission have expressed similar concerns.[12]

Against this background, the BCA's Sustainable Growth Task Force – working with other BCA Task Forces with the principal objective of locking in the nation's current performance – commissioned Port Jackson Partners Limited (PJPL) to;

- examine the current state of economic infrastructure that will shape long-term economic expansion, specifically transport and urban infrastructure, energy, and water;
- examine impediments or barriers to infrastructure provision that might affect high growth; and
- determine the types of reforms required to maximise current capacity and generate the necessary investment to support future growth requirements.

Clearly, as the PJPL report shows, current and likely future infrastructure deficiencies cannot be attributed to localised factors or issues of funding that are the responsibility of one tier of administration. The problems are so pervasive across jurisdictional boundaries and key asset classes that underlying causal factors need to be acknowledged and addressed. In the short term, high-profile challenges such as road, rail and port bottlenecks need to be resolved promptly if Australia is to realise the benefits of free trade agreements signed and in progress, in particular with the United States and China. In the medium term, infrastructure reform is crucial if Australia is to unlock further sources of productivity growth to offset the decline in the labour pool due to the ageing of the population, and to outperform growing global competition.

The infrastructure asset classes examined by the BCA are not exhaustive. They have been selected as examples of the issues and challenges Australia must urgently address across the broader infrastructure area if it is to aspire to continued high growth. As such, they point to broader challenges in Government planning and co-ordination and the impact of these challenges on future economic growth. Shortfalls in other areas of the economy, in particular relating to participation and skills shortages, which are exacerbating existing infrastructure capacity constraints, are addressed in other BCA publications.[13]

4

Infrastructure – the problems are clear

Australia has no official, up-to-date record of the state of the nation's economic infrastructure assets for the purposes of national strategy development and forward planning. Systematised and transparent audit processes are clearly wanting. It is therefore not surprising that the overall picture is one of under-investment, low-value uses, and short-term, fragmented policy formulation in Australia's infrastructure sector.

While the issue has been rapidly prioritised as a major impediment to sustained prosperity, a single or even consistent database of information that might account for the quality and quantity of Australia's infrastructure does not exist. Instead, the information required for strategic, long-term and cost-effective decision-making on infrastructure is scattered across a plethora of federal, state and local Government agencies. The absence of any coherent or consistent baseline of information in itself points to a fundamental lack of planning and coordination of infrastructure provision.

Without a clear baseline or international benchmark it is difficult to assess what is required to ensure Australia's infrastructure will handle future capacity requirements.

An internal paper prepared for the Business Council of Australia on the infrastructure requirements of continued high growth (i.e. 4 per cent per annum) for the next 20 years points to:

- a shortfall of approximately $50 billion in new capital stock required for road, rail and water assets;
- the need for investment of $40 billion in electricity generation and distribution to meet an expected 60 per cent growth in demand; and
- a potential water shortage of more than 600 gigalitres in urban areas – the equivalent of Sydney's current annual water use.[14]

However, even without a consistent information baseline on the state of Australia's infrastructure, the range of problems is clear, as demonstrated in the Port Jackson Partners Limited report that accompanies this Action Plan.

4.1 Energy

This subject is covered in more detail within the accompanying report from Port Jackson Partners Limited (page 7).

Australia's energy sector requires significant investment ($30-35 billion)[15] to support demand in the next 15 years, based on conservative growth estimates. Higher growth would place an even greater imperative on investments. On current generation plans, NSW for example will be below reserve generation standards by 2009 and Queensland by 2010. Given the lead times required for development of generation capacity in these States, investment needs to be announced now.

There remain a number of impediments to investment in the energy sector. These include:

- Generation retail price caps dampen investment signals;
- NSW owns virtually all the power industry in that State but will not invest or sell, which in turn affects the effective operation of the National Electricity Market and transmission investment decisions;

'One of the biggest sovereign risk issues facing the energy sectors is [the uncertainty surrounding] future Government policy and measures on emissions.'[16]

ELECTRICITY SECTOR KEY PROBLEMS

PERCEIVED NEED FOR INVESTMENT*

GDP growth assumption	3.3% p.a. to 2020
Electricity growth assumption	2.4% to 2020
Investment required in generation	$11b to 2020
Total investment required**	$30–35b to 2020

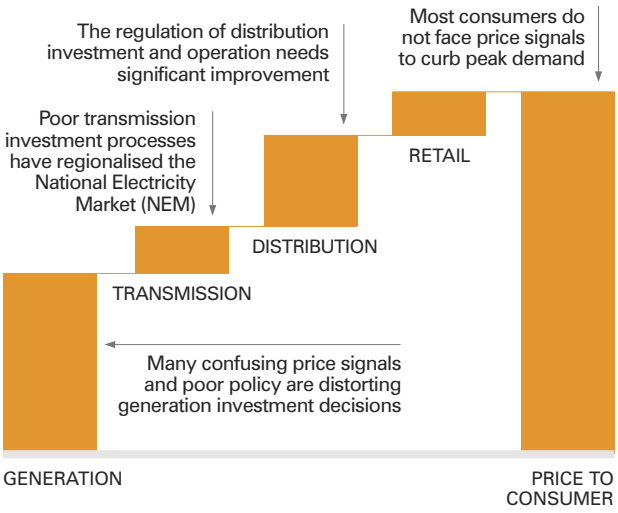
Demand gap of 53% over today's supply

* Based on ABARE report: Australian Energy, National and State Projections to 2019–20.

** Total investment required includes all energy sector investment.

Source: Port Jackson Partners Limited. (PJPL Exhibit 2)

MAJOR INVESTMENT IMPEDIMENTS

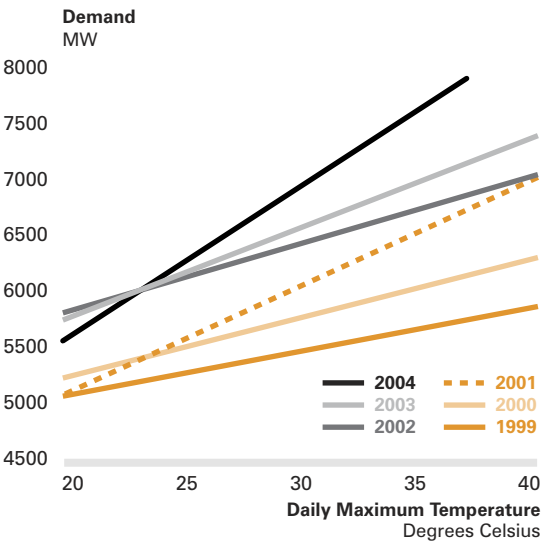


- Greenhouse policies differ between jurisdictions, favour different technologies/ portfolios and create investment uncertainty;
- The regulation test for new transmission is flawed;
- Regulation of distribution is intrusive, poorly based and favours cost reduction over service standards; and
- Most consumers do not face price signals to curb peak demand growth.

Delays and tensions around the energy reform agenda highlight the difficulty of substantial reform in complex public policy areas spanning different jurisdictions.

Failure to resolve such jurisdictional issues will inevitably impede Australia's global competitiveness.

PART OF THE PROBLEM – GROWING SENSITIVITY OF QUEENSLAND SUMMER LOAD TO TEMPERATURE



Source: NEMMCO; Bureau of Meteorology; PJPL analysis. (PJPL Exhibit 17)

No new projects of national strategic importance are currently under active development. By their nature, these projects, like a very fast train link between Sydney and Newcastle or a new inland freight rail system will require Federal – State cooperation.

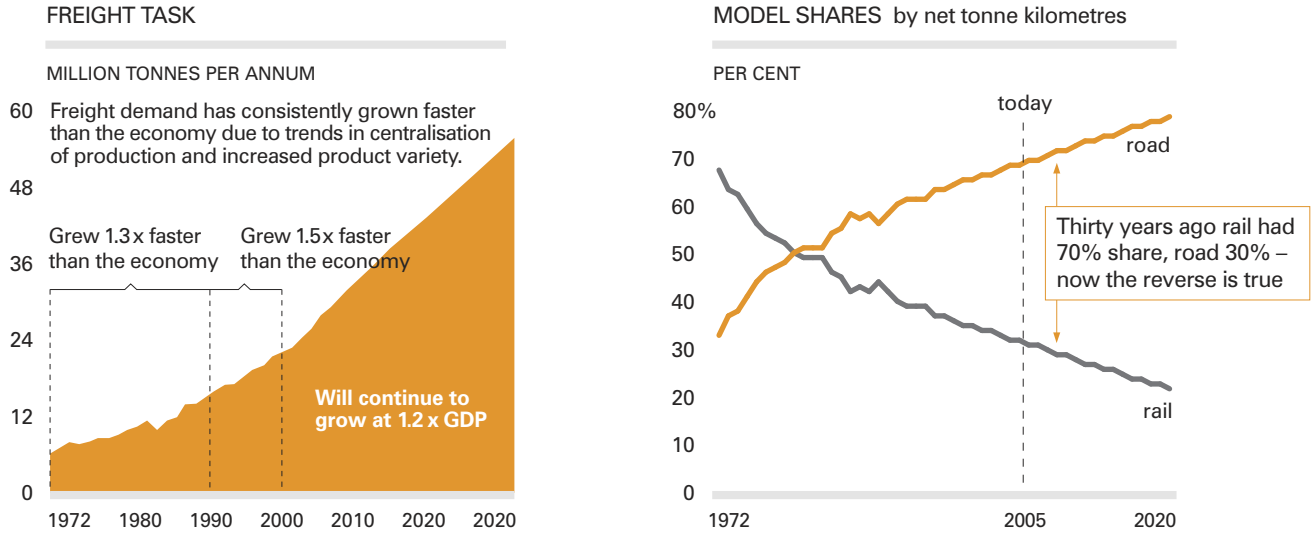
4.2 Intercapital freight transport

This subject is covered in more detail within the accompanying report from Port Jackson Partners Limited (page 29).

Inter-capital freight is growing faster than GDP and faces significant constraints in the future. Congestion costs, which are already significant, are projected to increase from $13 billion to almost $30 billion per annum by 2015, again on conservative economic growth assumptions.[17] If road freight continues to dominate freight share by 2020, PJPL suggests Australia would see:

- the need for a significant investment to build more and higher quality roads;
- a 90 per cent increase in articulated truck travel in metropolitan areas;
- an increase in CO_2 emissions of more than 700 kt per year; and
- increased accident costs of $70 million per year.

TRENDS IN INTER-CAPITAL FREIGHT LAND TRANSPORT (BTRE 2003)

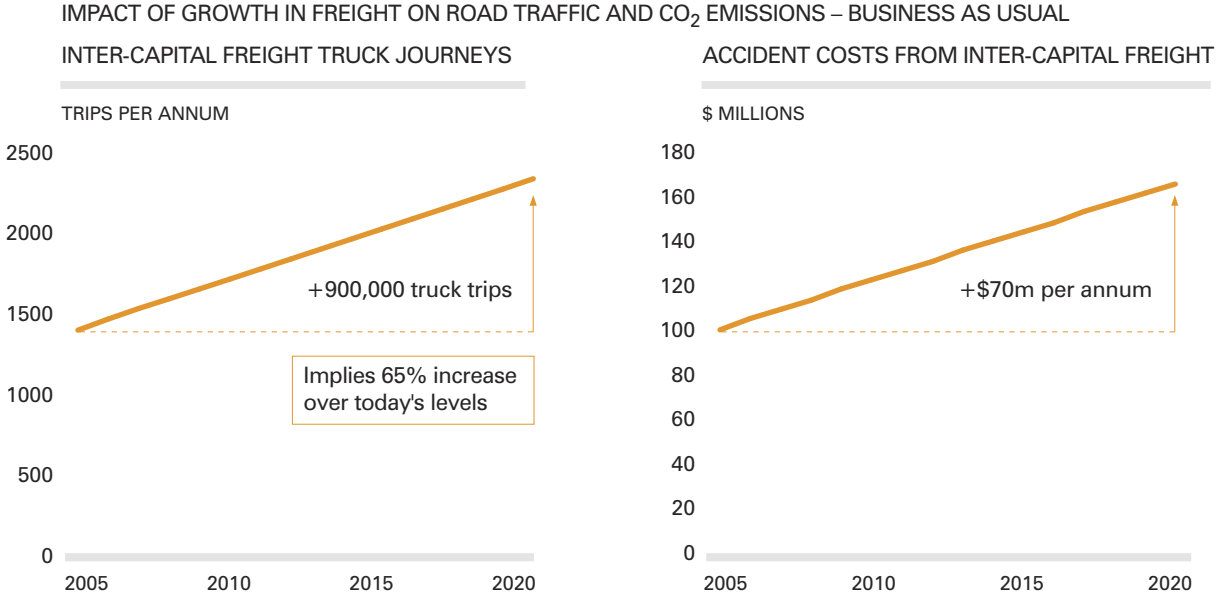


Source: BTRE Information sheet 22: Freight between Australian capital cities 1972–2001; BTRE staff paper, Predicting traffic growth in Australian cities, 2004. (PJPL Exhibit 19)

'Clearly there is a market failure (and Government failure to date) in both up-skilling and education attainment within transport that is constraining Australia's future productivity and international competitiveness.'

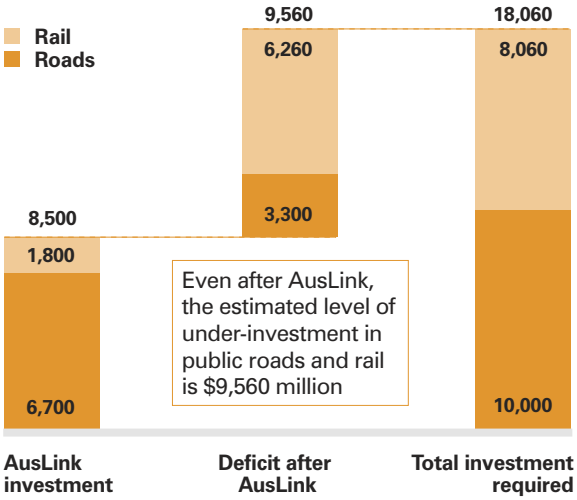
Ron Christie[18]

IMPACT OF GROWTH IN FREIGHT ON ROAD TRAFFIC AND CO_2 EMISSIONS – BUSINESS AS USUAL



Source: BTRE Information sheet 22: Freight between Australian capital cities 1972-2001;
BTRE Working Paper 40 – Competitive Neutrality Between Road and Rail, 1999; PJPL analysis.
(PJPL Exhibit 20)

LEVEL OF UNDER-INVESTMENT IN PUBLIC ROADS AND RAIL 2004 (A$M)



AusLink,[19] which deals only with the transport aspect of the agenda, goes some way to redressing the historical lack of integration and coordination in national land transport, but on its own will not be sufficient to deal with the likely future transport requirements.

Even after AusLink, there remains a significant deficit in funding required for road and rail infrastructure.

Source: Modelling the Economic Effects of Overcoming under-investment in Australian Infrastructure, prepared for AusCID, Econotech, 2004; Auslink White Paper, Department of Transport and Regional Services, June 2004, as cited in Expanding the Possibilities: A Vision for a Prosperous and Sustainable Australia – An internal report to the BCA Sustainable Growth Task Force, The Boston Consulting Group, 2004.

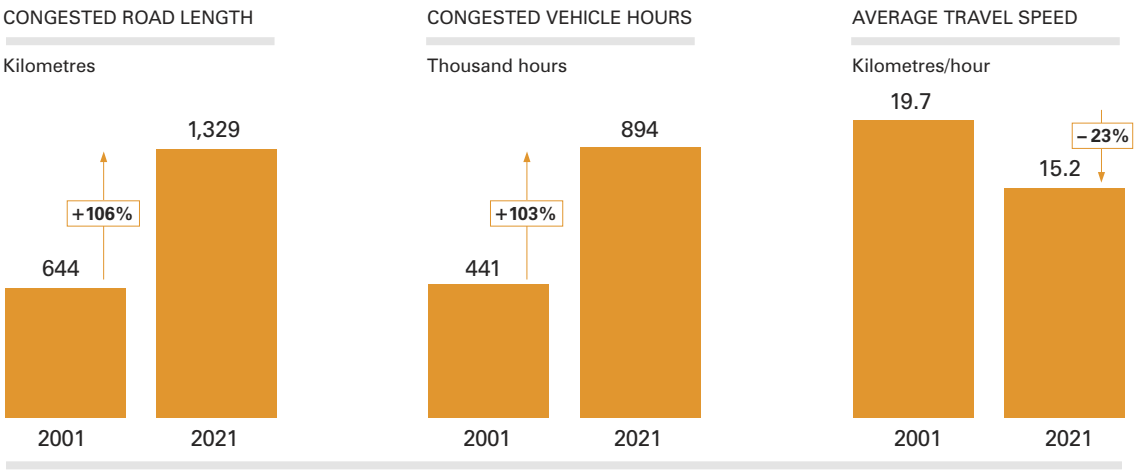
4.3 Urban transport

This subject is covered in more detail within the accompanying report from Port Jackson Partners Limited (page 47).

Urban road congestion, in part due to the growing freight task in all cities, is contributing to losses in productivity and higher economic costs. Within the next 20 years, the total length of congested road is forecast to treble.

Public transport systems in many States are performing poorly and showing signs of inadequate investment, especially in the outer growth corridors, adding to the urban congestion problem.

TRAFFIC CONGESTION IN MELBOURNE – 2001 TO 2021, AM PEAK



* The 2021 case assumes some additional roads and public transport infrastructure: road increases are largely outer metropolitan arterial roads, public transport includes bus service improvements, additional orbital bus routes, a light rail system and electrification of a train route.

Source: Transport modelling undertaken using the Melbourne Integrated Transport Model of the Victorian Department of Infrastructure.

(PJPL Exhibit 35)

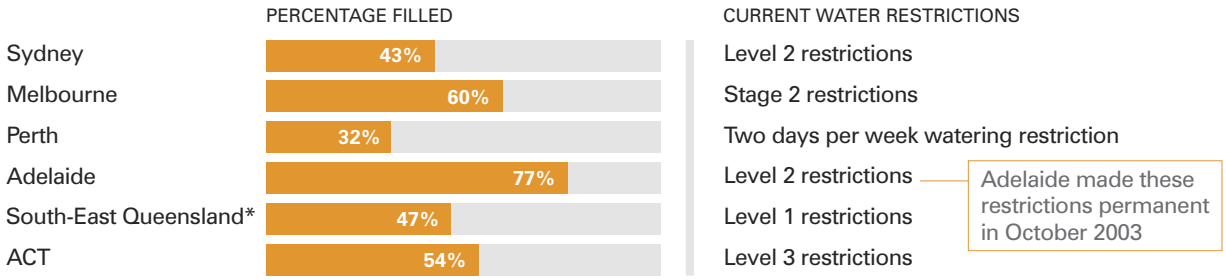
4.4 Urban and rural water

This subject is covered in more detail within the accompanying report from Port Jackson Partners Limited (pages 59 and 73).

Urban water dam levels are low in most city catchment areas and city consumption is already exceeding, or close to, sustainable water supply levels. Unless there are changes in usage trends, by 2025 Australia will see nearly all of its main cities consuming more water than is sustainable. While most State Governments are currently responding to current and future concerns with a wide range of water rationing/demand measures and some limited additional supply, there will continue to be excess demand for any commodity where scarcity is not factored into policy measures.

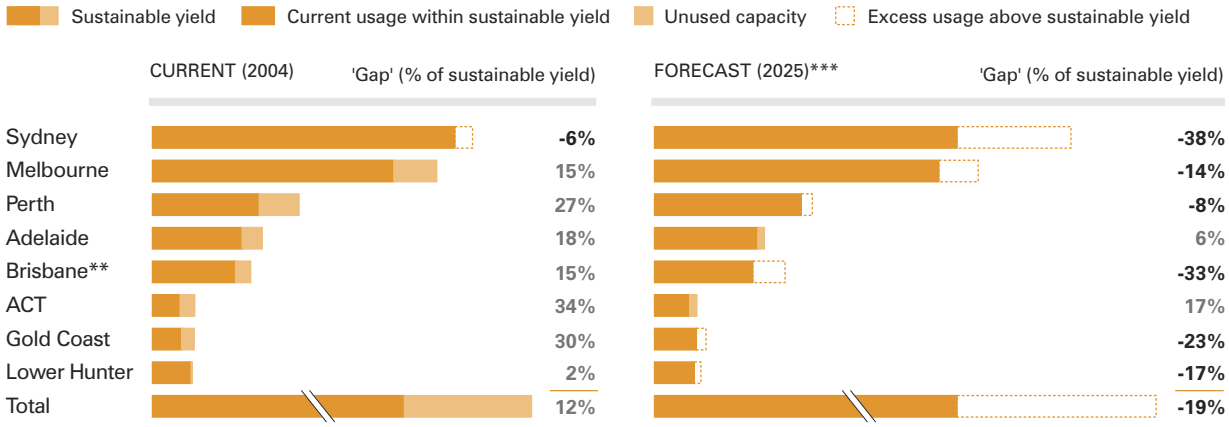
Along the East Coast, major surface and groundwater systems are under serious stress. Many irrigation systems are overallocated and have poor reliability, resulting in insufficient water in some years, poor water quality, unhealthy rivers and loss of biodiversity. The establishment of water trading under the National Water Initiative is proving difficult in practice, especially in terms of establishing permanent trading rights and consistent currencyconversion factors. As a result, water does not flow to the highest-value use, whether it be economic, social or environmental.

MAJOR URBAN DAM LEVELS AND WATER USAGE RESTRICTIONS – JANUARY 2005



* South-East Queensland includes Brisbane, Gold Coast and other areas in South-East Queensland.
Source: Water utilities' websites; Port Jackson Partners Limited.
(PJPL Exhibit 52)

URBAN* WATER SUPPLY CAPACITY VERSUS DEMAND Gigalitres per annum



* Figures include industrial water use in urban areas
** Brisbane includes only those people serviced by Brisbane Water (Brisbane City Council)
*** The Boston Consulting Group (BCG) forecasts adjusted to assume no increase in per capita consumption by 2005, assuming 20 million population.

Source: Water Services Association of Australia data adapted to BCA growth forecasts by BCG; Port Jackson Partners Limited.

(PJPL Exhibit 53)

5

The economic pay-off

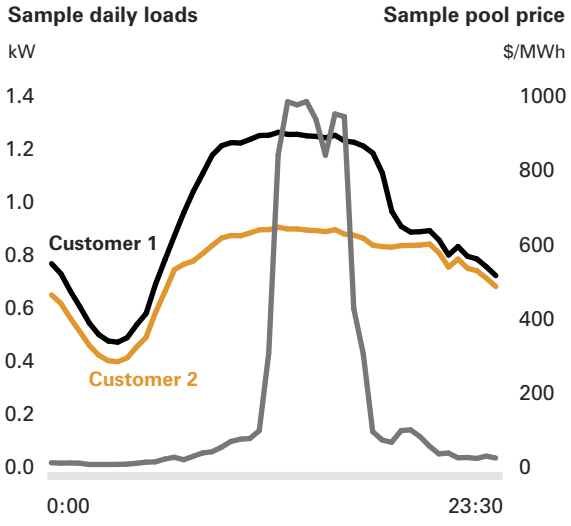
In assessing what action should be taken to address these infrastructure problems, we need to recognise that the issues identified with each asset class in the proceeding section are due to institutional arrangements and poor policy choices, not the result of high economic growth or a scarcity of resources.

The work by PJPL demonstrates that for each of the infrastructure challenges Australia faces, with changed institutional arrangements and policies in place to provide for management and allocation of resources, Australia could manage current capacity constraints and plan adequate future capacity commensurate with its long-term growth objectives and requirements.

All capital cities, including Sydney have water supply options at relatively low prices relative to other OECD nations to support future growth. Demand, efficiency and pricing measures now will provide better allocation of the currently available resource.

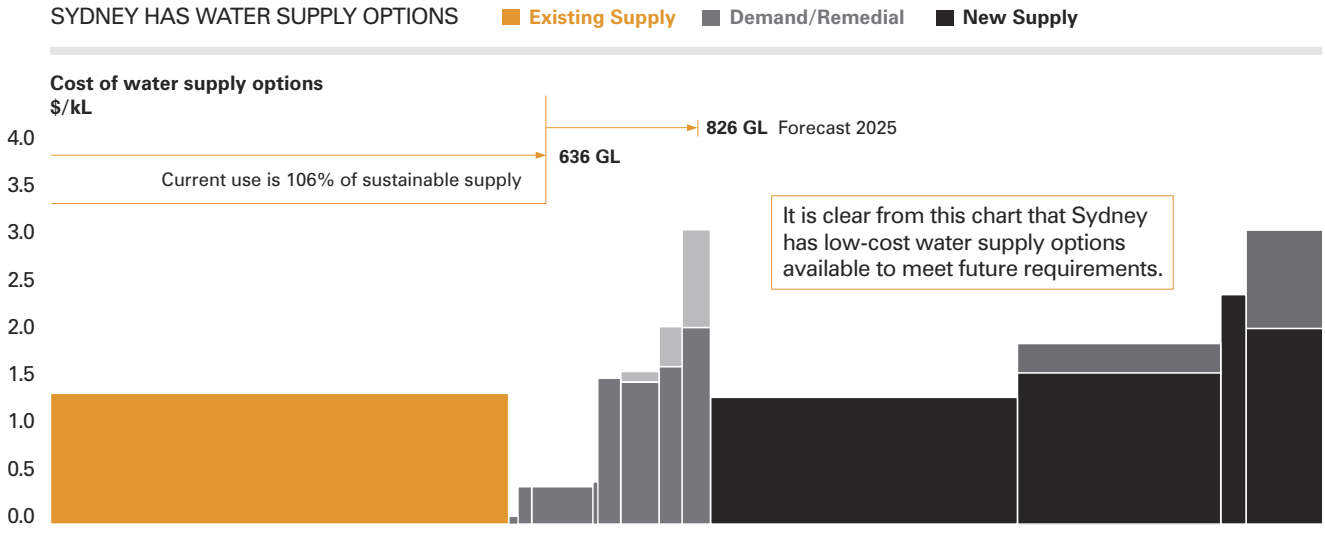
The use of sound science and water trading along the east coast would see substantial improvements in rural water management and allocation, and the environment.

COST REFLECTIVE PRICING AND SUBSIDIES



Customer 2 subsidises Customer 1
(PJPL Exhibit 18)

SYDNEY HAS WATER SUPPLY OPTIONS



Source: Water Plan 21; Metropolitan Water Plan 2004; Water and Sydney's Future 2004; IPART pricing determination 2003; press articles; Port Jackson Partners Limited.
(PJPL Exhibit 61)

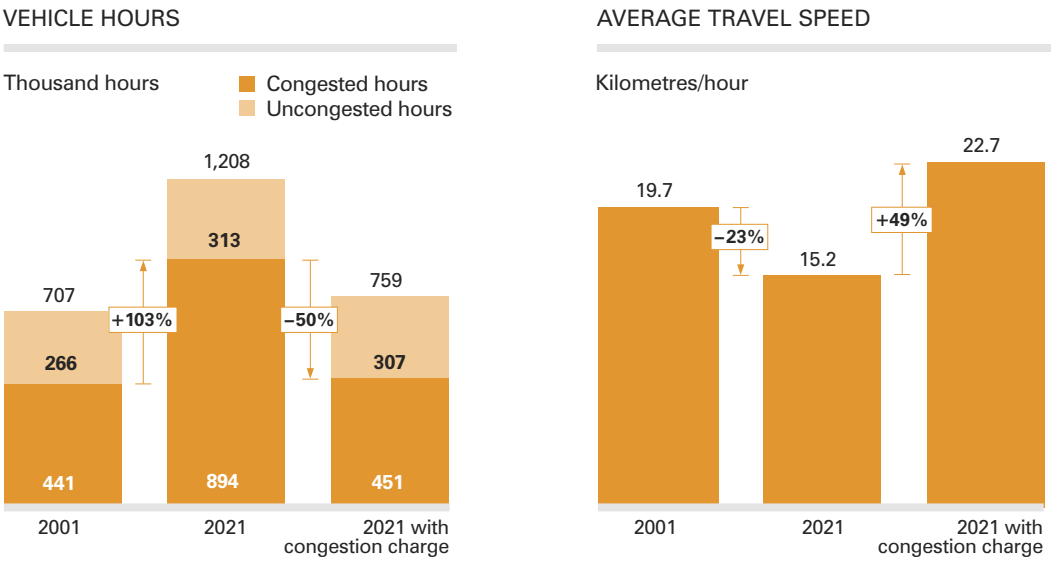
A range of regulatory changes and reforms in energy, and especially greenhouse policy, would facilitate the investment needed to address demands issues.

A coordinated approach to land and intermodal transport would address freight capacity and urban congestion arising from future growth.

The imperative across all asset classes is a need for coordinated policy reform across jurisdictions to establish the right investment signals for more effective allocation, management and planning of resources over the long term.

Preliminary work by Port Jackson Partners Limited conservatively estimates the boost to GDP to be in the order of 2 per cent or $16 billion.

IMPACT OF A CONGESTION CHARGE IN MELBOURNE, A.M. PEAK



Source: Transport modelling undertaken using the Melbourne Integrated Transport Model of the Victorian Department of Infrastructure.
(PJPL Exhibit 37)

6

The institutional and policy imperative

As a nation that aspires to sustained high economic growth, it is important that policy, management, planning and development is undertaken in a way that ensures optimal levels of infrastructure that in turn supports optimal levels of economic growth.

The BCA argues that while Australia's Federal system of government is here to stay, the nation would benefit from more effective and efficient cooperation between the three tiers of Government. Governments need to act as a nation to deal with national priorities in an increasingly competitive international environment. While business and industry has a role in infrastructure provision, the primary responsibility in terms of planning and coordination and creating the right climate for investment rests with Governments.

And yet, as demonstrated, Australia clearly faces institutional problems across a broad range of infrastructure classes. Common to these problems are the relations between Governments and current institutional arrangements. The issues can be broadly summarised as follows.

'Effective governance, as much as organisation success, depends on clarity of purpose, powers and relationships and transparent lines of responsibility and disclosure.'[20]

- Australia has no single responsible agency or process for monitoring, assessing or planning national infrastructure adequacy. It has largely been left to individual State Governments to determine appropriate levels of infrastructure for their State.
- The processes of planning and decision-making are fragmented and, in governance terms, lack appropriate levels of transparency and accountability within and between jurisdictions.
- Commitment to issues requiring national coordination is not always consistent.
- Blurred responsibilities between levels of Government make it impossible for the electorate to hold Governments accountable.
- There is a disjunction between revenue powers and expenditure responsibilities, especially between the Commonwealth and State and Local Governments.
- Investment and planning decisions are sometimes characterised by short-term, ad hoc and/or political considerations and therefore do not lend themselves to sustainable investment.
- There is a lack of integration across infrastructure asset classes and broader policy, despite clear inter-linkages.

The table below sets out the pattern of infrastructure funding responsibilities that has evolved in Australia – a position that stems from the balance of fiscal strength and the financial relations between levels of Government.

LEVEL OF GOVERNMENT	ECONOMIC INFRASTRUCTURE
COMMONWEALTH	Aviation services (air navigation, etc.) National roads (shared) Local roads (shared) Railways (shared) Environment – national rivers, greenhouse gas emissions
STATE/TERRITORY	Roads (urban, rural, local) (shared) Railways (shared) Ports and sea navigation Aviation (some regional airports) Electricity supply Dams, water and sewerage systems Public transport (train, bus) Environment – greenhouse gas emissions
LOCAL	Roads (urban, rural, local) (shared) Railways (shared) Ports and sea navigation Aviation (some regional airports) Electricity supply Dams, water and sewerage systems Public transport (train, bus) Environment – greenhouse gas emissions

The BCA would argue that this situation is unsustainable – that reform of the current arrangements is needed, taking into account lessons from the past.

6.1 Some lessons from past experience

In an internal paper for the BCA on reforming Federal relations, Dr Vince FitzGerald of the Allen Consulting Group[21] suggests that where the intergovernmental structures have worked reasonably constructively in progressing policy and decisions in areas where roles and responsibilities are shared between Governments, some key features have been:

- **Buy-in at the top**
  - Heads of Government have used existing forums effectively to discuss key issues and to negotiate agreement. The clear commitment of heads of Government has then created strong incentives within each jurisdiction to sort out how implementation could occur.

- **Leadership from the Commonwealth**
  - Successful companies do not leave key strategic issues for the whole organisation to their separate business units to resolve independently, hoping that consistent, efficient solutions will emerge. Australia cannot afford to do so either. When the Commonwealth has provided national leadership, as recently on water, good progress has been made. It needs to take a similar approach on a broader range of issues. This does not mean taking a unilateral, take it or leave it approach, but being willing to actively engage with the States on an equal basis.

- **Leadership from among the States**
  - Greatest progress has been made when leadership from the Commonwealth has been matched by leadership from the States – typically with one (or a few) of the Premiers taking front running and reaching a meeting of minds with their Commonwealth counterpart (e.g. Greiner with Hawke, Kennett with Keating).

- **Fast enough progress so that issues do not become bogged down**
  - Reform can be difficult and Governments need to persevere, but steady progress needs to be made or key players will lose patience and interest. This highlights the importance of discussion and commitment at a high level to keep the momentum going and the importance of transparent consideration of issues.

- **Incentive for reforms**
  - It is unlikely that the progress made on a number of reforms would have occurred to the degree it has without special purpose and national competition payments.

- **Removing day-to-day management and some aspects of decision-making from the political arena**
  - The establishment of independent expert bodies in some areas can help to achieve longer-term goals that may not be as easy to pursue in a forum inevitably influenced by political considerations. It can be done only where those goals and a clear policy framework for achieving them have been developed at the political level. Moreover, it will fail without demonstrable outcomes and accountability.
  - There are many examples of where this has worked successfully in areas where only one level of Government is involved. Two in the Commonwealth sphere are the Reserve Bank, which has independent responsibility for adjusting interest rates with the primary goal of maintaining low inflation, and the Australian Statistician, who has statutory independence in deciding how best to meet the statistical needs of the community.

Correct investment signals and removal of regulatory impediments may considerably lower the perceived need for expansion of physical infrastructure in the short term, thereby buying time while skill and material availability issues are addressed.

6.2 A package of reforms

The BCA believes that if Australia is to aspire to retain and grow in status as an internationally competitive nation, we need a comprehensive national infrastructure reform agenda, supported by processes and structures that ensure greater accountability between Governments on infrastructure planning.

Together, Commonwealth, State and Local Governments need to act now to alleviate existing constraints on the nation's infrastructure and develop capacity for future growth:

- **Under the auspices of the Council of Australian Governments (COAG) (COAG reconstituted, or an alternative peak intergovernmental body) develop a national integrated infrastructure reform agenda covering:**
  - urban and rural water, energy and greenhouse, and road and rail transport.
- **Review and strengthen governance and institutional arrangements relating to infrastructure to ensure:**
  - a balance of powers between levels of Government;
  - clear articulation of the roles and responsibilities of each level; and
  - transparent lines of responsibility and disclosure.
- **Ensure the peak intergovernmental body (COAG or alternative):**
  - is accountable;
  - clearly articulates goals for reform, underpinned by a broad set of principles establishing consistency across jurisdictions;
  - develops specific plans and timetables with firm targets for action, and robust mechanisms to prevent backsliding;
  - maintains oversight of implementation of reforms – this authority should not be delegated; and
  - is supported by an independent secretariat with analytical capacity.
- **Maintain incentives for reform and utilise Australia's capacity for economic growth.**
- **Establish independent, transparent and regular assessment, monitoring and public reporting on reform progress, asset performance and condition:**
  - publish an annual state of the nation infrastructure report encompassing all jurisdictions.

6.2.1 A comprehensive national infrastructure agenda

The case has been put for a comprehensive national infrastructure agenda, across the sectors identified in this report: rural and urban water, energy and greenhouse, freight and urban transport. For each of these areas there is a powerful argument for the involvement of Government leaders at all levels.

The case for COAG, or a strengthened peak intergovernmental body, adopting a broad and coordinated reform agenda is clear.

Rural water, energy and freight transport are all cross-jurisdictional issues and require coordination and planning by all Governments in the national interest. Urban water is interlinked to rural water, and rural water policy frameworks and decisions overlap jurisdictions. Likewise urban transport planning is interlinked to freight and national road transport and associated framework policies of the Commonwealth (e.g. levies on fuel, taxation arrangements). Climate change creates further linkages between all areas.

Moreover, current funding transfers from the Commonwealth to State and Local Governments affect national economic performance and interstate planning for distribution of the population, economic activity and development.

Reforms across economic infrastructure cannot be progressed without leadership from the Commonwealth, given its role and its fiscal power, matched by leadership from the States and Territories.

'Certain infrastructure needs are common to all Australians regardless of geographical location – defence, aged care, child care, law and order, border protection, water, transport to name but some. There are different priorities and needs for different people but all are part of a larger jigsaw where the threads of infrastructure need to be drawn together in a cohesive, integrated and sustainable national long-term agenda.'[22]

The AusLink program may meet some criteria of a visionary long-term strategy, but it does appear to concentrate on transport renewal and upgrade rather than development for future growth.

6.2.2 Strengthened institutional arrangements

National economic performance and the welfare of the community depend significantly on how well the roles of Australia's three levels of Government and the private sector are integrated to ensure the substantial investments required in infrastructure are well planned, well allocated and at the optimal level. An important consideration in proposing a comprehensive national reform agenda is that intergovernmental relations involve complex tiers of overlapping responsibilities. And the extent to which activities across jurisdictions are coordinated and complementary determines our performance as a nation.

The existing peak intergovernmental forum COAG has worked reasonably well on a range of issues such as the management of the Murray-Darling Basin and National Competition Policy Reforms. When it works well, it is a powerful national coordinating body. However, reforms in other areas slow or stall when COAG becomes subject to the immediate political agenda or relies on Ministerial Councils for full oversight of implementation.

The BCA has concerns about the current workability and effectiveness of COAG. COAG is seen by many as favouring the Commonwealth over State and Local Governments rather then being a body with balanced status across the jurisdictions. This in part stems from the fact that the Commonwealth sets the agenda, determines timing of and chairs meetings and provides the secretariat to COAG.

There is however an onus on the States and Territories, as well as the Commonwealth, to exert leadership and a far greater spirit of cooperation with the Commonwealth and between themselves. There is also an opportunity, largely not exercised, for Local Government to play a more active, integral part in the arena of national policy and as the tier of Government most closely attuned to the needs of growing local regions.

It is suggested that there is need for the peak intergovernmental body to provide a forum for the leaders of all Australian Governments to come together, share their views of what are the priorities for the country, produce a common strategic vision, and work through how their Governments can collaborate to produce the most effective results possible.

By its nature COAG covers a wide brief and the uncertain mix of responsibilities, particularly between the Commonwealth and the States and Territories are contributing factors in the current infrastructure issues. Competition policy and infrastructure issues have been agreed at the COAG table only three times since 2000. During that time, COAG has also discussed issues such as indigenous affairs, health services and counter-terrorism and ordered a review of Ministerial Councils to place greater focus on strategic issues, improve reporting and information flows on key issues and outcomes, and provide for regular reviews by Ministerial Councils of their own functions.

Of the broad reform agenda proposed, urban water and urban transport have never been on the COAG agenda.

Strengthening the accountability and transparency of the peak intergovernmental body is, in our view, essential. Government leaders must ultimately effect arrangements that facilitate democratic accountability within and between Governments and jurisdictions.

Water: the benefits of collaboration

The positive impact of inter-jurisdictional responsibility for water is evident in the establishment of a collaborative program for management of the Murray-Darling Basin (MDB). The Prime Minister, Premiers of New South Wales, Victoria and South Australia and the ACT Chief Minister have signed an MDB Water Agreement, which sets out arrangements for investing $500 million over five years commencing in 2004–05 to reduce the level of water over-allocation and achieve specific environmental outcomes in the MDB.

The role of COAG in national water reform is, however, less positive with progress over the past decade arguably very slow. Its 1994 Water Reform Framework established strategic directions for water reform, including pricing reform, more rigorous investment appraisal, the creation of water entitlements separate from land title, trading in water entitlements, the allocation of water for use by the environment, measures to address water quality, improved natural resource management, and institutional reform. Reflecting this framework and competition policy agreements, there have been significant structural changes to the water supply industry, especially urban water supply, but progress has been slow in some other areas. Irrigation water and its trading remain issues requiring attention.

Current mechanisms for coordination between the two principal levels of Government

- The Council of Australian Governments (COAG). COAG's agenda is substantially dictated by the major immediate political priority. The agenda is framed within the Department of Prime Minister and Cabinet, although the States and Territories have some lead-up input via officer-level meetings with the Prime Minister's Department in the months before each COAG meeting;
- Sector-specific Ministerial Councils, comprising Ministers from the two levels of Government and in many cases the relevant New Zealand Minister; and
- Committees of Government officials established to deal with specific areas of responsibility.

6.2.3 Maintain incentives for reform

The distribution of funding from the Commonwealth, as the largest revenue raiser, to the States and Territories plays a significant role in influencing the parameters within which State and Territory and Local Governments and the private sector operate in a number of ways.

As the National Competition Payments come to an end, consideration needs to be given to the types of incentives that could apply across jurisdictions for further reform.

Bringing the reform program to completion according to an announced timetable is important to avoid the impression that difficult reforms can be deferred indefinitely. Without other avenues of accountability, fiscal federalism will continue to be an important lever in achieving the broad reforms envisaged.

The BCA considers that if accountability and transparency are not improved, and inter-jurisdictional conflict not removed, there is a case for developing models that provide for the hypothecation of revenue to infrastructure spending.

Payments to the States and Territories

- Special Purpose Payments (SPPs), which are grants made on Commonwealth terms and conditions for the delivery of specified services by the States and Territories. In 2004-05, it is estimated $24.6 billion will be distributed via SPPs across a wide range of areas of Government responsibility, with the bulk being allocated to the big ticket spending areas of health and education. The SPPs account for 41 per cent of total Commonwealth payments to the States and Territories; and
- The payment of Goods and Services Tax revenue on an untied basis on the advice of the Commonwealth Grants Commission. The Federal Treasurer has confirmed this will involve payments of $34.5 billion in 2004-05, rising to more than $41.3 billion in 2007-2008.[23]

In addition to the SPP and GST disbursements, the States and Territories also receive competition payments based on annual National Competition Council assessments of their progress in implementing National Competition Policy and related reforms. For fiscal 2005 the competition payments will amount to $724.1 million, compared with $578 million for 2003-04.[24] Only three jurisdictions – Victoria, Tasmania and the ACT – received their maximum payments. The remainder incurred payment suspensions of $114.1 million and permanent deductions of $26.2 million due to reform obligations that had not been met.

6.2.3 An annual state of the nation audit

A clear national picture of the adequacy and capacity of existing economic infrastructure assets to ensure it is at optimal levels to support growth is essential, especially given the increasing involvement of the private sector in provision of infrastructure.

At present, the infrastructure industry relies on irregular State and Local Government sector specific audits and dispersed data sets, which are not consistent between jurisdictions for assessment and planning.

The BCA believes it is essential that Governments put in place processes for transparent, independent and regular assessment, monitoring and reporting of reform progress, and of infrastructure asset condition and performance. An annual state of the nation infrastructure audit would:

- go a long way towards improving accountability and transparency of all Governments;
- provide a mechanism for national forward planning;
- allow early identification of areas requiring further work; and
- ensure that our economic infrastructure is able to sustain growth going forward.

An example of past experience

The establishment of the National Transport Data Working Group was 'derived from a recognition that there was a fundamental lack of coherent transport data to meet the strategic longer-term requirements of infrastructure development and management'.[25] In its November 2004 report on the availability of data for a national transport data framework, released after the AusLink White Paper, the National Transport Data Working Group concluded:

- Australia has no single responsible agency or process for assessing, monitoring or reviewing basic transport data;
- basic road infrastructure data, which has received reasonable funding for a number of years, is generally considered to be extensive and reasonably consistent;
- the position with respect to road usage data is mixed;
- comparable data on rail asset condition is either non-existent or not available; and
- for intermodal facilities 'there does not appear to be any readily accessible source even for data on what facilities exist and where'.[26]

7

Conclusion

Securing a sustainable future for Australia is not primarily a matter of money. The planning and strategy comes first.

Everyone is aware we are at a crisis point, but the strategic thinking and answers aren't there.

This requires an agenda agreed by all Governments that outlines economic infrastructure requirements and reform commitments with a practical degree of specificity. That includes a structural transformation of COAG to become the peak national driver of reform with a long-term agenda of priorities focused on sustainable growth.

Why the urgent need for change? The imperative as set out in this report is that Australia has to act decisively to address the current deficiencies and inefficiencies with integrated coordination and planning to meet future growth needs. The benefits are obvious – continuing prosperity and opportunity, the ability to step up the competitive capability of Australian business another notch, to consolidate our global position and cater for the needs of a growing community.

The quality and efficiency of our economic building blocks – the infrastructure that enables the economy to perform well – is one of the most significant factors that will determine our future capability. If we are to realise the most desirable objective – an ongoing growth rate of 4 per cent – Australia needs to commit itself to a major policy overhaul in infrastructure planning and a change in mindset to ensure we invest in the asset base required to sustain strong growth and manage it efficiently.

In the first instance, it is a matter of assessing our infrastructure assets, the need to upgrade them and the need for new infrastructure, a coordinated approach to its development with long-term specific objectives in mind as to where Australia is heading in the next 15 to 20 years. It is not primarily a matter of money – planning and strategy comes first.

This requires an agenda agreed by all Governments that outlines economic infrastructure requirements and reform commitments with a practical degree of specificity. Institutional arrangements need to promote accountable and consistent asset management and focus on the delivery of outcomes and the production of transparent information that comprehensively measures the performance of the national asset base. The opportunity exists to establish an independent institution with the specific charter of auditing, reporting, and advising on the performance of our infrastructure assets.

This role could be fulfilled by a reformed COAG or a specific purpose body operating under the ambit of COAG.

Finally, there is a need to provide the right incentives and create the right environment for long-term investment, including reduced regulatory complexity, increased policy certainty and improved capital deployment.

The pay-off from adopting a national coordinated approach to these issues has the potential to underpin the next stage of economic growth and Australia's competitive position on the global stage.

Notes

1 *Action Plan for Future Prosperity* and *BCA Budget Submission 2005–06*, Business Council of Australia, 2005.

2 This is a dynamic aspirational target pitched against international competitors.

3 The Speed Limit: A Report to the BCA by Access Economics (unpublished), 2005.

4 Reform in a number of areas will each contribute to generating faster growth, including higher participation, investment in education, higher immigration, taxation and regulatory simplicity.

5 Henry, K., Secretary to the Treasury, presentation to the BCA, 19 October 2004.

6 There is strong agreement that past economic reforms, implemented largely from the mid-1980s to late 1990s have played a central role in Australia's recent productivity performance. See Review of National Competition Policy Reforms Discussion Draft, Productivity Commission, 2004.

7 Intergenerational Report 2002–03, Commonwealth of Australia, 2002.

8 Statement on Monetary Policy, Reserve Bank of Australia, 2005.

9 The Reform Dividend, unpublished Report to the BCA by Access Economics, 2005.

10 Trends in Australian Infrastructure Prices 1990–91 to 2000–01, Productivity Commission, 2002.

11 Statement on Monetary Policy, Reserve Bank of Australia, 2005.

12 The Hon. Mark Vaile MP, Minister for Trade, ABC News, 1 February 2005; The Hon. John Anderson MP, Minister for Transport, The Weekend Australian, 16 December 2004; The Hon. Kim Beazley MP, Leader of the Opposition, Speech to the Australian Council for Infrastructure Development, 1 March 2005; Review of National Competition Policy Reforms Discussion Draft: OECD Economic Survey of Australia 2004, Productivity Commission, 2004.

13 See for instance *Workplace Relations Action Plan for Future Prosperity*, Business Council of Australia, 2005.

14 Expanding the Possibilities: A Vision for a Prosperous and Sustainable Australia – An internal report to the BCA Sustainable Growth Task Force, The Boston Consulting Group, 2004.

15 Expanding the Possibilities: A Vision for a Prosperous and Sustainable Australia – An internal report to the BCA Sustainable Growth Task Force, The Boston Consulting Group, 2004.

16 Submission to the Productivity Commission Review of National Competition Policy, Energy Supply Association of Australia, 2004.

17 AusLink White Paper, Commonwealth Government of Australia, 2004.

18 Letter from Mr Ron Christie, Coordinator General of Rail to the Honorable Carl Scully MP, Minister for Transport, New South Wales.

19 AusLink White Paper, Commonwealth Government of Australia, 2004.

20 Regeneration: New structures, new leaders, new tradition, Dr Peter Shergold, Secretary of the Department of Prime Minister and Cabinet, 2004.

21 Reforming Federal Relations, internal report to the BCA Sustainable Growth Task Force. Dr Vince FitzGerald, The Allen Consulting Group, 2004.

22 'Infrastructure Planning and Development – What Role Government?' Paper delivered by the Hon. Shane Stone QC to the Malaysia/Australia Engineers Conference June 2004.

23 'States Receive GST Windfall', Statement by the Treasurer, 21 December 2004.

24 Statements by the Federal Treasurer, December 2003 and December 2004.

25 National Transport Data Framework Report, National Transport Working Group, 2004.

26 National Transport Data Framework Report, National Transport Working Group, 2004.

Reforming and Restoring Australia's Infrastructure

Report prepared for the **Business Council of Australia**
by Port Jackson Partners Limited

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Port Jackson Partners Limited

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

The principal author of this Report is Rod Sims who has been a Director of PJPL for over 11 years. He is currently a Commissioner of the National Competition Council and Chairman of Inglewood Farms which has irrigated farmland in the MacIntyre Brook area (mentioned in this report). He was Chairman of the NSW Rail Infrastructure Corporation from 1996 to 2003, and he was a member of the panel that prepared the Energy Market Review for the Council of Australian Governments (the Parer Review) in 2002. As Deputy Secretary of the Commonwealth Department of Prime Minister and Cabinet he played a major role in the formulation of National Competition Policy in the early 1990s and he was the Economic Adviser to the Prime Minister from 1988 to 1990.

Imma Wormleaton, an Associate of PJPL, helped co-ordinate the research on all topics and took the lead role in the research on electricity and urban transport. Laura Eadie, an Associate of PJPL, took the lead role in the research on urban and rural water. David Tickler, a Business Analyst at PJPL, compiled the research on inter-capital freight.

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Finally, this Report benefited greatly from discussions with the BCA members and Secretariat.

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CHAPTER 1

OVERVIEW OF THE PROBLEMS AND POTENTIAL SOLUTIONS

CHAPTER 1

Overview of the problems and potential solutions

1.1 Introduction

Well functioning infrastructure is fundamental not just to economic growth, but also to the enjoyment of the benefits of economic prosperity. Residents and indeed visitors to a country will judge its economic performance and management by whether the lights stay on reliably, whether the movement of people and freight can occur without hours spent in traffic jams or on dysfunctional public transport, and whether there is adequate water in the cities and healthy rivers in the country.

While people may disagree strongly on their future vision for Australia, all will agree that sound infrastructure is an important part of that vision.

Traditionally two views have dominated perceptions of Australia's infrastructure.

- The first is the perception of low productivity in many public infrastructure providers
- The second is the lack of national integration in infrastructure regulation and investment.

Indeed, in relation to infrastructure, the countries of Europe often appeared more integrated than Australia. It was not that long ago that we saw our national rail freight carried by State-based rail freight companies, trucks needing to comply with very different rules as they drove across State borders, new electricity generation capacity being built in one State despite an excess of power in another, and territorial disputes over access to water and who was responsible for water management.

Many of these issues have been addressed over the last 15 years through the Council of Australian Governments (COAG). The formation of the National Electricity Market, the Murray Darling Basin Commission, National Rail and the National Roads Transport Commission, for example, were all positive steps that improved productivity and moved Australia more towards one infrastructure market rather than many.

1.2 Adding a third infrastructure imperative

As this report will show there is still much more to be done to improve our infrastructure productivity and integration. We should, however, now add a third imperative to the two described above. This goes to the adequacy of Australia's infrastructure, or our inability to balance the demand for and supply of our infrastructure.

There are increasingly visible indications that Australia's infrastructure is not adequate to meet our needs. This can be seen, for example, from the low dam levels and water restrictions in our cities, the fact that right down the East Coast our surface and groundwater systems are under great stress, the emerging or likely bottlenecks to moving our freight and from increasing urban road congestion.

It is now time both to reform and restore our infrastructure. The urgency arises from the fact that there is a long time lag between the cause of the problems and the resulting state of our infrastructure.

The problems we are now experiencing in urban and rural water had their 'seeds' in actions taken (or not taken) many years ago. Likewise if action is not taken now to remove the many impediments we face to appropriate investment in our electricity sector then we may well face serious shortages in the future.

Added to these concerns about the adequacy of our infrastructure are warnings of lower economic growth. While Australia has enjoyed average growth of close to 4% over recent decades the Commonwealth Treasury is warning us to expect growth on average closer to 2% in the coming decades. To help Australia avoid this very unsatisfactory outcome Treasury lists a productivity agenda which includes the need to address issues in relation to our energy, water and land transport infrastructure.[1]

More recently, in the Reserve Bank Governor's testimony to the House of Representatives Economics Committee, he said that ... "we will have to get used to seeing GDP growth rates starting with the numbers 2 or 3 rather than 3 or 4" …because of a range of capacity constraints in our economy.[2]

Against this background the Business Council of Australia (BCA) asked Port Jackson Partners Limited to address two key questions.

- Given the state of our infrastructure can Australia afford to allow the existing high levels, or even higher levels of economic growth? That is, will higher economic growth only lead to 'private riches' but 'infrastructure squalor', as we suffer even harsher, say, water restrictions and even greater difficulties moving around our cities?
- Alternatively, is significant infrastructure reform now required to achieve higher economic growth by removing potential bottlenecks and bringing higher productivity? That is, can infrastructure reform both facilitate and drive higher economic growth?

[1] Australia's Economic Prospects, Treasury presentation to the Business Council of Australia AGM, October 2004

[2] Commonwealth of Australia Official Committee Hansard, House of Representatives, Standing Committee on Economics, Finance and Public Administration, 18 February 2005

1.3 Our headline perspectives

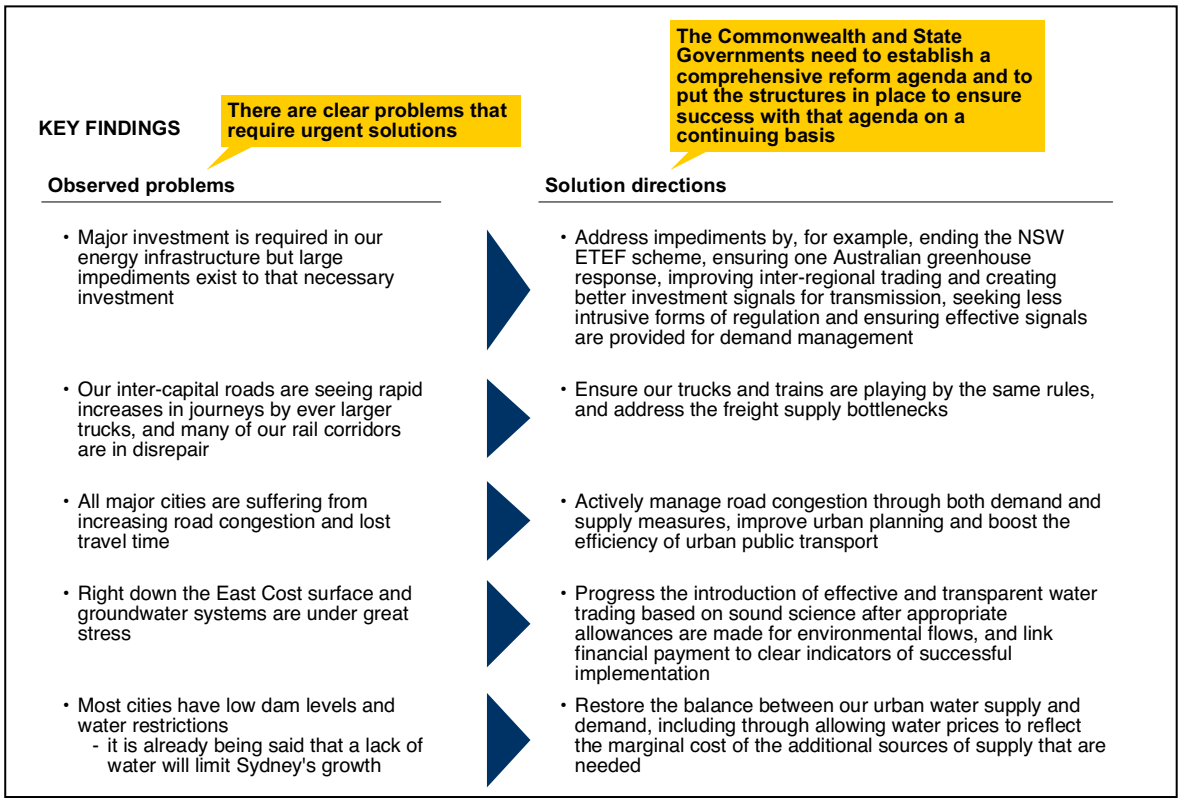
To address these questions we have taken many steps. In particular, we have interviewed many sector specialists and people in relevant areas of both the Commonwealth and State Governments, we have read many recent reports and Government policy statements, we have undertaken a range of well targeted analysis and we have drawn on our own experience in working in various industries.

We agreed with the BCA that to make for a manageable scope of activity and to illustrate the problems, we would focus on five areas of infrastructure. These are electricity, inter-capital freight, urban transport, rural water and urban water.

Our conclusions are as follows (see Exhibit 1).

- The current and feared future state of our infrastructure flow from poor public policy choices and not from high economic growth. There is a pressing need to revisit these poor public policy choices
- Improved infrastructure policy can both drive higher economic growth through higher productivity and the removal of potential bottlenecks, and it can drive superior lifestyle and environmental outcomes. That is, there are win/win policy options available
- The required policy change directions are clear :
  - We need to provide the right economic signals to facilitate appropriate consumer and investment choices
  - With the right signals the impediments to the required investment will be removed, and the funds will then be available to finance this investment
- Of most importance, the key step is now to put the policy structures in place to address the problem. We need to establish a comprehensive Commonwealth and State infrastructure reform agenda and the structures to ensure it can succeed. The issues require Commonwealth/State co-operation and continuing focus.

Exhibit 1



The agenda to restore our infrastructure is a compelling one that can both boost GDP significantly (see Chapter 7) and improve our standard of living in wider ways. It is an agenda that Governments, business and the wider community should embrace.

This Report has not sought to recommend the precise changes that Governments should make or the timing of them. That would be beyond the scope of a report of this nature. What this Report does is outline the nature and extent of the problems, describe how solutions are available, and urge that the structures be put in place to advance this fundamental agenda.

It is important to emphasise that the first step is to get the right policy structures and principles in place before any 'instant fixes' are sought. Indeed, it is fundamentally important that we:

- Avoid inappropriate investments that can occur when the incentive frameworks are distorted
- Understand that, while significantly more investment is required, it will not always be the answer as we cannot invest to duplicate our rivers or our central business districts

- Take care when addressing our infrastructure regulation that we do not simply boost the economy's cost structure in unhelpful ways by, for example, high asset valuations
- Focus on removing the impediments to investment as the key means of reforming and restoring our infrastructure.

This Report has six further chapters. The next five chapters deal with electricity, inter-capital freight transport, urban transport, rural water and urban water. The final chapter provides perspectives on how to take a compelling Commonwealth/State infrastructure agenda forward.

CHAPTER 2

REMOVING THE MANY IMPEDIMENTS TO INVESTMENT IN OUR ELECTRICITY SECTOR

CHAPTER 2

Removing the many impediments to investment in our electricity sector

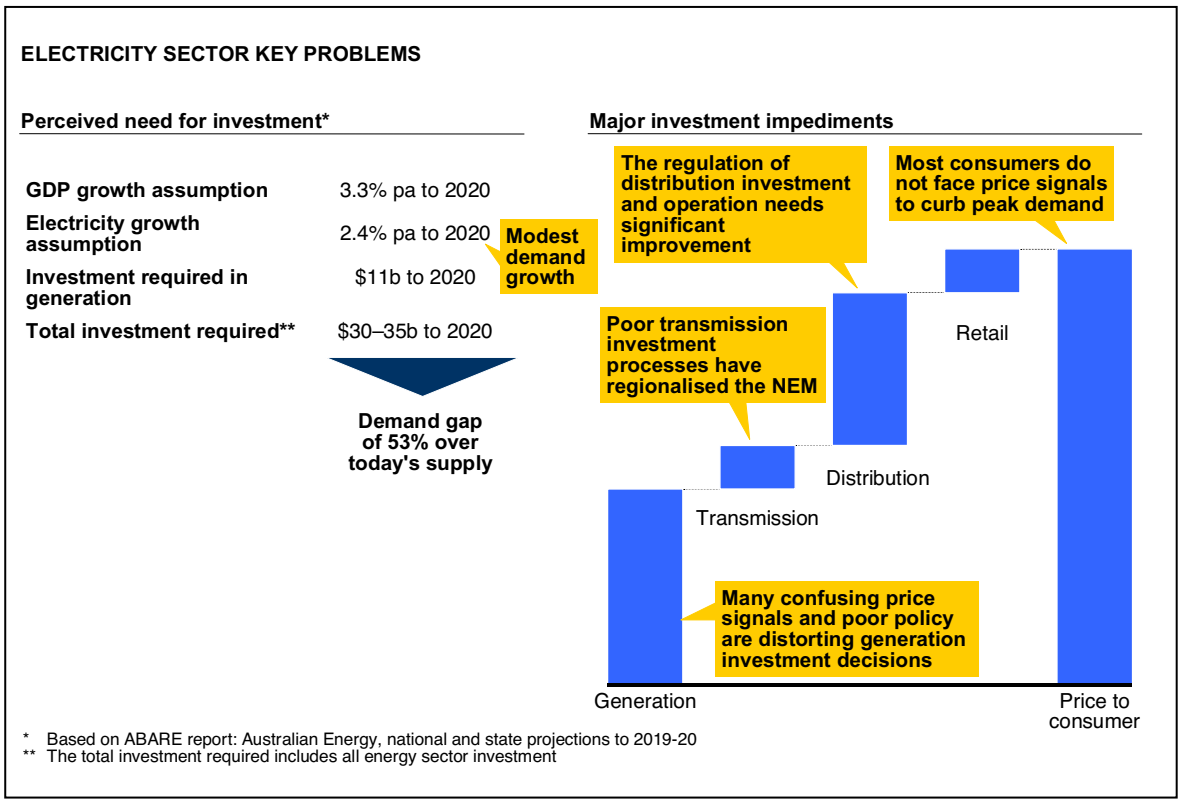
2.1 Highlighting the problem

Electricity supply is, of course, fundamental to our industry and our lifestyle. Its cost is a key determinant of our economy's overall cost structure, and it is an important source of competitive advantage for our country. As our economy and population grow we will need more investment in our electricity supply.

The Australian Bureau of Agricultural and Resource Economics estimates that $30-35 billion of investment will be required in Australia's energy sector by 2020. Of this, they estimate $11 billion will be required in new electricity generation, and the rest needs to occur in electricity transmission and distribution and our oil and gas sectors. For the purpose of this Chapter we will focus on electricity.

The problem is that our electricity industry in particular faces many impediments to this investment occurring (see Exhibit 2). There are strong impediments to the needed investment in all parts of the electricity value chain.

Exhibit 2



The impediments are quite specific and fundamental and require well targeted solutions. The good news, however, is that the direction of the solutions is apparent. Exhibit 3 provides a summary of the specific impediments and the proposed solution directions. We believe most of these solution directions would have support within the electricity industry and many were proposed by the 2002 COAG Energy Market Review.

Exhibit 3

ADDRESSING THE PROBLEMS

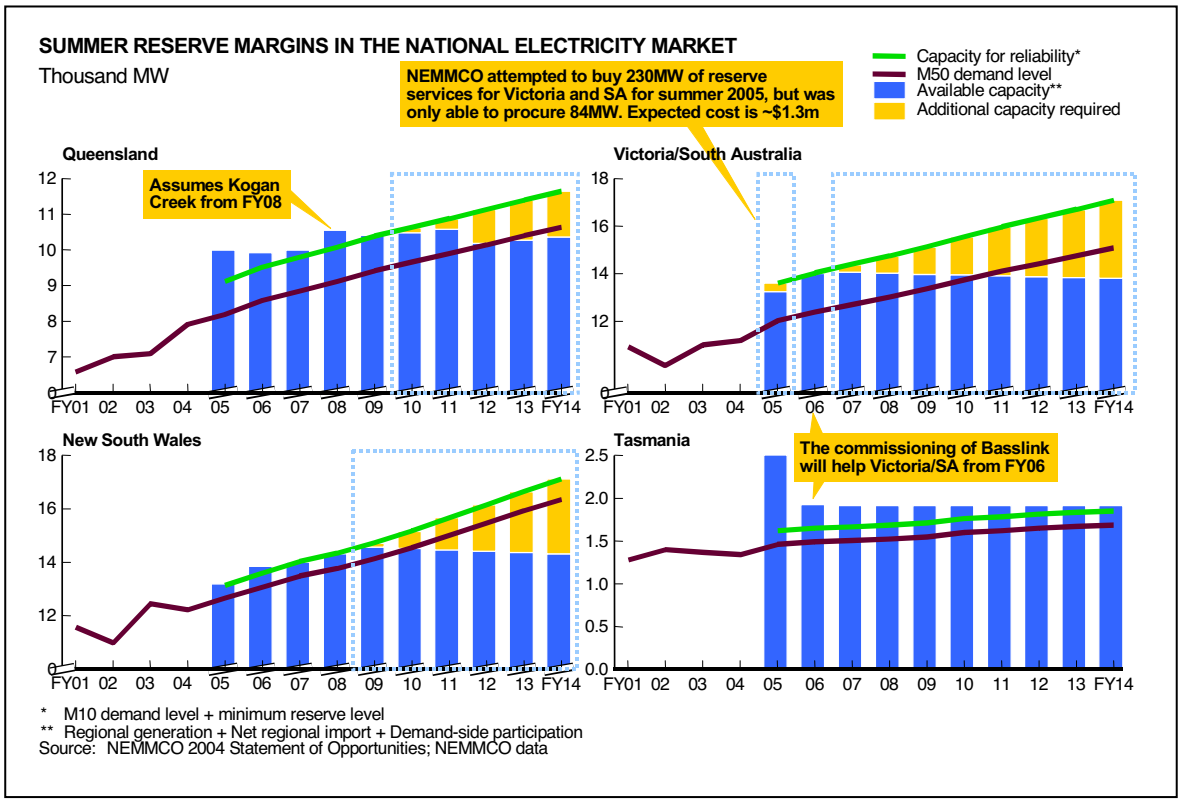
Impediments to investment	Solution directions
1 Generation	
• Retail price caps can dampen investment signals, and the NSW ETEF arrangements cause particular problems	• Set clear path to remove retail price caps and ETEF arrangements
• The NSW Government owns virtually all the NSW power industry, but will not invest or sell	• NSW sell its retail and generation assets
• Poor greenhouse policies favour particular technologies and create uncertainty	• Have one Australian greenhouse response
2 Transmission	
• The current regulatory transmission test seems flawed, and transmission approval processes slow	• Improved inter-regional hedging arrangements could create better investment signals for transmission
3 Distribution	
• Regulation is intrusive and favours cost reduction over service standards	• Seek a less intrusive form of regulation with clearer service delivery incentives
4 Prices to consumers	
• Most consumers do not face price signals to curb peak demand growth	• Introduce interval meters and allow time-of-use retail and distribution pricing

What follows expands on both the impediments and the solution directions.

2.2 The many confusing signals that are distorting generation investment decisions

We will likely need new generation in Victoria and South Australia very soon, and both NSW and Queensland probably need to start planning now for additional generation. NEMMCO's (the market operator) most recent Statement of Opportunities shows that Victoria and South Australia are below reserve standards in FY05, and will continue to be so. NEMMCO was recently forced to activate its 'reserve trader' powers to cover the shortfall. By NEMMCO's estimates NSW may fall below reserve standards by 2008-09, and Queensland by 2009-10. This is shown in Exhibit 4.

Exhibit 4



There are serious concerns about whether this investment will be forthcoming, or in the right areas. This is because of a range of impediments of which the following are examples.

- Retail prices are heavily regulated in all National Energy Market (NEM) States and in at least some areas they provide a barrier to investment in new generation capacity
- Some government risk reduction arrangements for their electricity entities blunt the signals that should encourage more peaking plant in particular
- Government ownership itself can have some perverse effects on the signals to invest
- Uncertainty about future greenhouse policies makes investment returns highly uncertain.

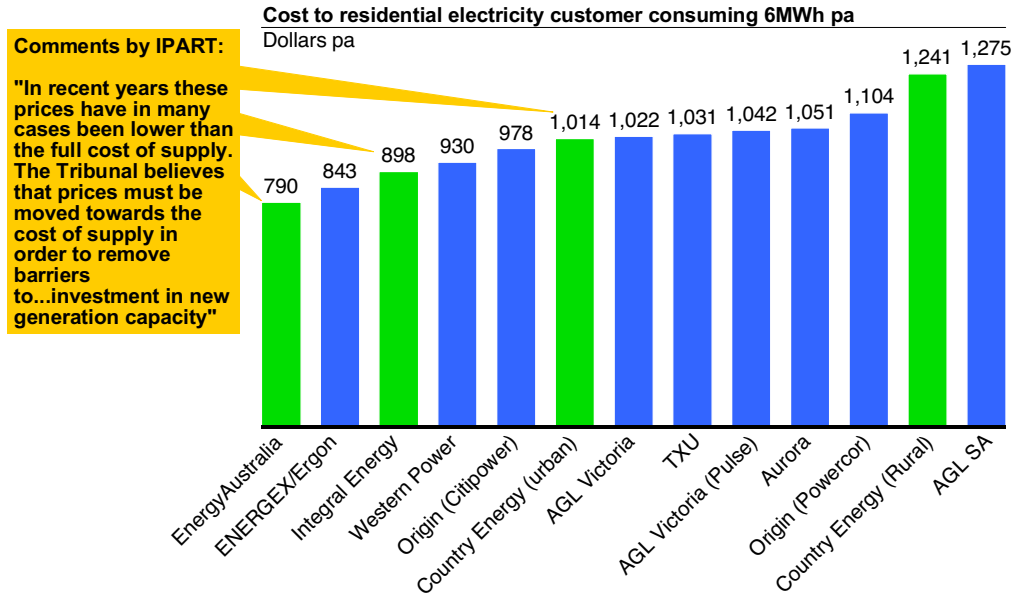
We shall describe briefly each of these concerns.

2.2.1 Price caps

Retail electricity tariffs for residential customers who have not accepted contracts (franchise customers) are regulated in all States, but at very different price levels. This is shown in Exhibit 5.

Exhibit 5

REGULATED RETAIL TARIFFS



Source: Energy retailer and regulator websites for tariffs

Different States have different mechanisms for setting these franchise tariffs. In Queensland and Victoria they are set by the Government, in NSW by the State regulator, while in South Australia the State regulator can intervene if they believe the tariffs are excessive. At least in the latter two states there is a greater chance the tariffs will be cost reflective.

These regulated prices can dampen or destroy the signals for new generation investment if they are not set at appropriate levels. The NSW Independent Pricing and Regulatory Tribunal (IPART) has, for example, clearly stated that in NSW the regulated prices have been at levels that do not cover the full cost of supply. Since both transmission and distribution revenues are set by regulators, these low prices mean that investors in new generation cannot, in IPART's view, earn a sufficient return on investment.

This is the 'rent control' problem. Low prices are set to protect consumers, but instead they can threaten the adequacy of supply.

This is an issue of concern throughout the entire National Electricity Market. While some price setting mechanisms are better than others there is always the chance that in any such mechanism the regulator will intervene at too low a price level.

2.2.2 Government risk reduction schemes

Both the NSW and Queensland Governments have traditionally run schemes that seek to protect their Government-owned retailers and generators from the risks of the potentially volatile electricity market. Given their apparent belief that the market risks are too large without some protection mechanism, they have intervened in the market in potentially damaging ways to smooth returns.

While Queensland has recently largely abandoned its scheme, NSW has not. The contrast between recent events in both States is interesting.

The NSW Government's Electricity Tariff Equalisation Fund (ETEF) means that retailers do not face wholesale electricity price signals on a large proportion of their load and therefore, unlike other retailers, do not have the commercial imperative to ensure new peaking generation in particular is constructed. The mechanism through which the Fund has this effect is explained in Exhibit 6, as is the effect of the changed arrangements in Queensland. As can be seen in the Exhibit the NSW Government seems to be aware of the harmful effect the ETEF can have.

Exhibit 6

ETEF ARRANGEMENTS AND A LACK OF GENERATION INVESTMENT

ETEF arrangements

- Retailers pay money into the ETEF when pool prices are lower than the energy component of the regulated tariff. They receive from the ETEF when pool prices are higher so that they may earn a regulated margin
- If there are shortfalls in the ETEF, NSW Government-owned generators must make payments to cover the shortfall
- In the recent Energy Directions Green Paper the Government asked whether the ETEF should be allowed to expire on 30 June 2007

"Without the Fund...retail businesses would be fully exposed to the volatility of the small customer load. This would provide strong incentives for investment in new generation capacity as the supply-demand balance tightens"

Vs

New arrangements in Queensland

- The Queensland Government changed from a system where the Government managed most of the energy price risk on the franchise load to arrangements where the retailers now manage most of the risk
- In November 2004 Energex Retail announced an intention to contract financial hedge cover with the Wambo Power Venturers backed by 450MW of new gas fired generation in Queensland
  - The agreement will "help Energex manage its peak load financial risk in the wholesale market"

Source: NSW Treasury ETEF Information Paper, December 2000; NSW Government Energy Directions Green Paper December 2004

Over the last two years the Queensland Government has moved from a mechanism similar in its effect to ETEF to arrangements where it negotiates a price with its retailers to supply the energy to franchise households and businesses. Once this negotiation is complete the retailer must then hedge its risks in the market just as it would when selling energy to any other customer. The effect of this change has been profound. Energex Retail soon discovered it needed to bring on additional

peaking plant to reduce its potential risk. Under the old arrangements it would have had little incentive to do this.

2.2.3 Government ownership

Whenever there is a mix of private and public ownership in an industry there are suggestions that the market is not being allowed to work properly. In NSW the State Government owns virtually the entire industry, in Queensland the Government-owned entities are in the majority, while in Victoria and South Australia the industry is all in private hands.

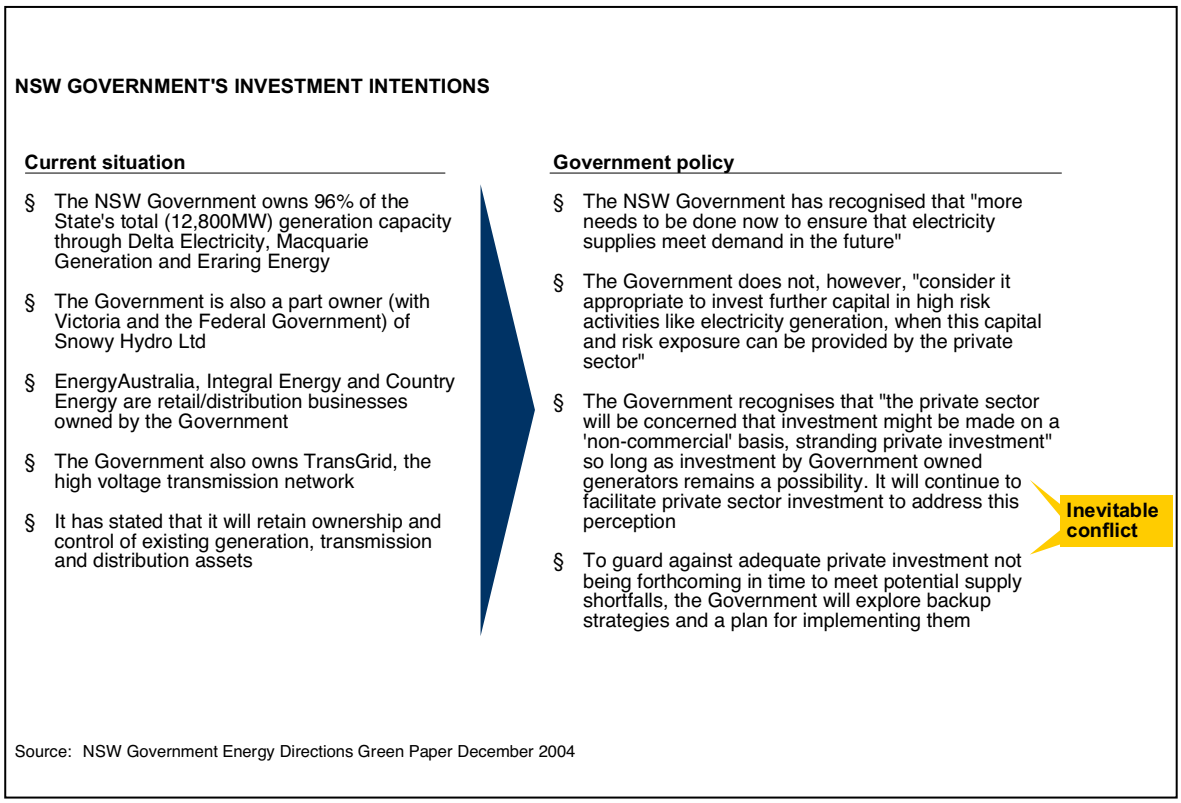
One problem is that the private sector can never be sure what is motivating the Government-owned entities to invest. They cannot be sure that Government-owned entities have the same motivations that they do.

In Queensland there has been significant investment in new generation in recent years. This has either been as a partnership between the public and private sectors (Tarong North, Callide C), purely private investment (Milmerran) or by a Government-owned entity (Kogan Creek)

While Queensland has had a need for this new generation, NSW has until recently had surplus generation. This situation has now changed and the NSW Government currently faces a serious dilemma.

The NSW Government owns almost all of the electricity industry in NSW, and recognises the need for more investment in generation, but it has stated that it wishes neither to invest in nor sell its generation assets. Its position is summarised in Exhibit 7.

Exhibit 7



It is difficult to see how this situation will play itself out. Will the private sector be willing to invest in new generation knowing that the rest of the NSW industry is government-owned? Will the NSW Government wait long enough or will it feel forced to pursue its mentioned 'backup' strategy and invest itself?

It is hard to justify a role for governments in owning retail and generation assets in what is a competitive market with significant private participation already. In addition, it is not helpful to NSW or the National Electricity Market to have an owner that does not wish to sell or to invest in the usual way.

2.2.4 Greenhouse policies

The very different greenhouse policies and stated intentions by various Governments are a major impediment to investment in generation. Indeed, it could over time be the largest impediment.

The problem arises because:

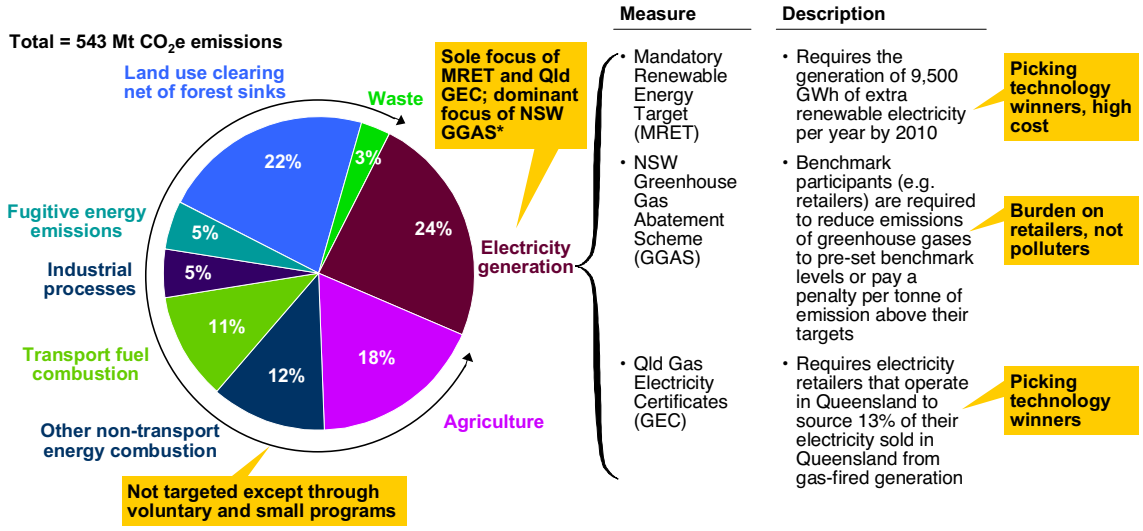
- The current enforceable greenhouse schemes are widely seen as flawed, and therefore not sustainable, and
- Most governments are suggesting that further major change is likely and the possible effects of these unknown changes can be profound.

It is worth briefly exploring both of these points.

The current existing enforceable measures to deal with greenhouse reduction are targeting only a minority of sources of greenhouse emissions and are not seen as efficient or effective. These schemes are summarised in Exhibit 8.

Exhibit 8

SOURCES OF GREENHOUSE GAS EMISSIONS AND MANDATORY REDUCTION SCHEMES
Percent of 1990 CO_2e emissions



* The GGAS allows, for example, the capture of fugitive emissions as a method of meeting abatement targets

Source: COAG Energy Market Review 2002; Australian Greenhouse Office

The current schemes are so flawed as to represent unsustainable policy. For example:

- The Commonwealth Mandatory Renewable Energy Target (MRET) Scheme at the margin strongly favours investment in wind power. This source of energy costs 100-150% more than conventional energy, and is only available when the wind blows. This means that conventional energy is required in any event as a backup, which therefore requires a near double up in capital outlays. There is also a limit to the amount of wind power the system can handle without threatening system security
- Both the MRET and Queensland GEC schemes are arbitrarily picking technology winners rather than allowing the market to determine the lowest cost of abatement
- Since NSW and Queensland have additional schemes, users in those States are disadvantaged relative to users in other States. This has an arbitrary effect on resource allocation
- Gas generation in Queensland is favoured relative to other locations which also has an arbitrary effect on resource allocation

- The NSW GGAS Scheme is to end in 2012 so it is currently very difficult to invest in greenhouse abatement schemes and have time to gain a return on that investment.

Making matters worse is that most Governments are proposing new measures which are all different. This creates another layer of uncertainty.

Both the Victorian and NSW Governments have recently released their positions on greenhouse policy. These are summarised in Exhibit 9. In the case of Victoria there is a focus on emissions trading, monitoring emissions from generators, low emission technologies and the facilitation of significant wind power. In NSW many questions were asked which canvass extending the current unique State scheme, introducing a new compulsory generation emissions standard, encouraging gas and other low emission technologies and only approving new generation if it can meet a high 'precautionary principle' hurdle in order to gain environmental and planning approvals.

Exhibit 9

RECENT GOVERNMENT POSITIONS ON GREENHOUSE POLICY

Victorian Government Policy Framework [1]	Questions raised by the NSW Government [2]
• Victoria supports the development of a national emissions trading scheme led by the Federal Government	• In the absence of agreement on a national emissions trading scheme, is extending the NSW Greenhouse Gas Abatement Scheme to 2020 the best way to provide potential investors in energy infrastructure with sufficient certainty in greenhouse policy beyond 2012?
• Victoria will introduce requirements for large emitters to report and disclose emissions	• How should NSW ensure a precautionary approach to potential environmental impacts is incorporated into the assessment and approval process for NSW energy projects?
• Victoria will pursue a strategy to develop and demonstrate low-emission energy technologies including cleaner brown coal, and will facilitate technology developments in renewable energy and energy efficiency	• Should generation emission standards be mandated?
• Victoria believes the mandatory renewable energy target (MRET) should be expanded to 19,000 GWh by 2010, and will consider a State and Territory-based target	• What NSW Government environmental and planning requirements should be included in the proposed state Environmental Planning Policy (SEPP)?
• Victorian renewable energy targets will aim to increase the share of Victoria's electricity consumption from renewable resources to 10% by 2010	• What role should gas play in providing new electricity generation capacity?
• Victoria will facilitate the development of up to 1,000 MW of wind energy by 2006	• What role can the Government adopt to further develop low emission technologies? What role should low emission technologies play in providing new electricity generation capacity?

Source: [1] The Greenhouse Challenge for Energy, Victorian Government Position Paper, December 2004
[2] New South Wales Government Energy Directions Green Paper, December 2004

Developers in all States may feel that the uncertainty surrounding the nature and extent of any future greenhouse policy or other intervention is such that it is difficult to commit to any particular technology. Government policies could arbitrarily promote some forms of generation over others and alter the anticipated merit order dispatch.

Indeed, this is the constant refrain from both the electricity industry and respected commentators. For example:

- *"One of the biggest sovereign risk issues facing the energy sector is future Government policy and measures on emissions"*
  - Electricity Supply Association of Australia (ESAA), 2004
- *"... divergent approaches to greenhouse gas abatement across jurisdictions, as well as uncertainty about future policy directions are impeding necessary investment ..."*
  - Productivity Commission, 2004

Perhaps the clearest example of this uncertainty came from a study by the respected consultants ACIL, who modelled a 'carbon penalty' on the electricity generation industry in the form of a permit cost under an emissions trading scheme. Their conclusion was that:

- *"... we (imposed) ...a $10 penalty ..., (and) a $30 penalty ... Victorian brown coal production would (either) fall slightly ... or precipitously"*
  - ACIL, 2001

That is, brown coal generators do not know whether the many foreshadowed new measures will mean that their likely production will be affected a little or a lot. This greatly complicates investment decision making.

The solution is one national greenhouse response that is sensible and stable to remove the current uncertainty. Without this certainty electricity generation investment will be deferred beyond when it would otherwise occur. This could have unfortunate consequences for Australia.

2.3 The poor transmission investment processes that have regionalised the NEM

The original objective when forming the NEM was to have one market. Generation would be built where it was most economic, and generators and retailers could optimise trades across State borders.

The NEM remains, however, more like five markets than one. In most States generators and retailers largely trade intra-regionally as it is too risky to trade inter-regionally. This is because there is a large risk of transmission lines binding and price separation between regions which can leave one party to a wholesale trade or hedge still exposed to high prices. While 'insurance' can be purchased through participation in the settlement residue auctions (which can allow parties to access the price difference between regions), this insurance is of no use if the transmission lines are not operating effectively.

NEMMCO's 2004 Annual National Transmission Statement (ANTS) reported on the system normal performance of the major transmission lines in the NEM, and showed that many lines may be constrained on many occasions. The NEMMCO data is summarised in Exhibit 10. The worst performing lines are VIC/SA and Qld/NSW.

Exhibit 10

PERFORMANCE OF THE TRANSMISSION NETWORK AND DEVELOPMENT PRIORITIES

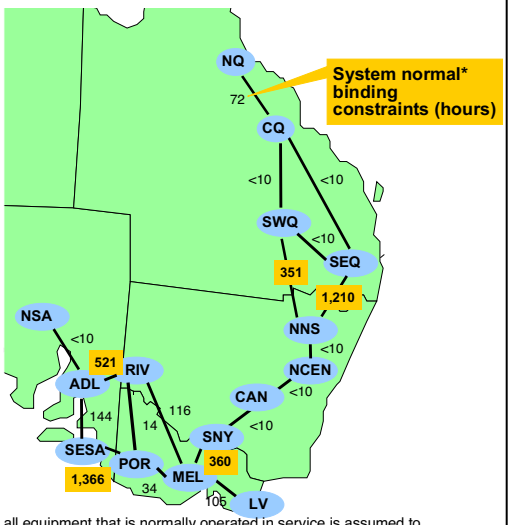
ANTS interconnection development priorities

Based on flow path analysis

- **Victoria to Snowy**
  - has highest ranking based on forecast number of congestion hours and capacity requirements
  - no conceptual augmentation option was identified
  - economic analysis may rank it lower as congestion typically occurs at times of low price
- **Queensland to NSW on QNI**
  - further analysis required to ensure all network limitations are addressed
- **Victoria to South Australia**
  - possible options include a Heywood interconnector series compensation upgrade or a NSW to SA high voltage DC proposal

Based on assessment of the supply-demand balance

- **Snowy to Victoria**
  - low ranking on flow path analysis, but can affect the supply-demand balance in Victoria/SA
  - analysis of options to upgrade the NSW-Snowy-Vic link is recommended

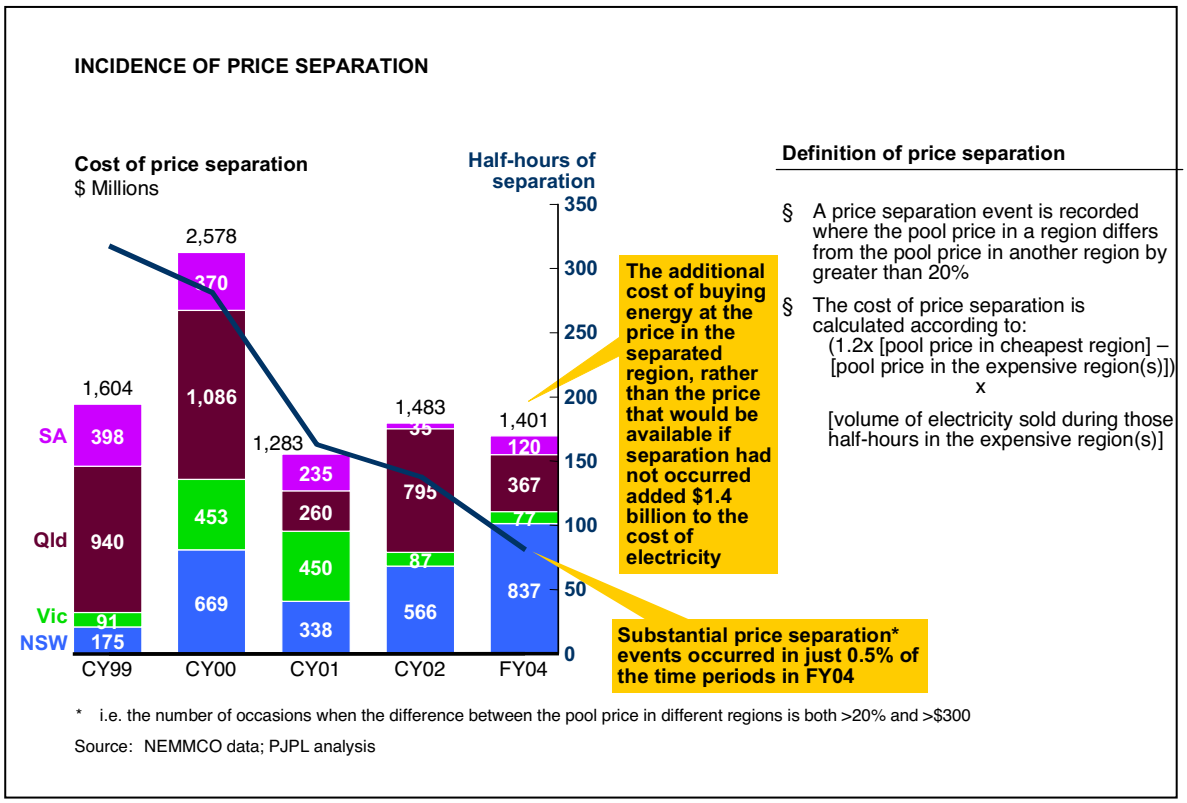


* System normal means that the transmission network is fully available and that all equipment that is normally operated in service is assumed to be in service

Source: NEMMCO ANTS 2004

Perhaps the best way to illustrate the issue is to look at the cost of price separation due to lines binding. This is estimated in Exhibit 11. A separation event is defined here as one where the price in one region is greater than another by 20%.

Exhibit 11



* i.e. the number of occasions when the difference between the pool price in different regions is both >20% and >$300

Source: NEMMCO data; PJPL analysis

Using this definition, the cost of price separation has varied between $1.4 billion and $2.6 billion per year since 1999. In 2003-04 the additional cost due to price separation may have increased the cost of electricity by approximately 23%. In that same year the transmission lines were binding only 0.5% of the time but the effect on prices during those times was very large indeed.

The difficulties associated with enhancing transmission capacity have been well illustrated with the proposed NSW/SA interconnector and are summarised in Exhibit 12. An interconnector that was proposed in 1997/98 and widely supported then now seems unlikely to be built in the near term. The then South Australian Government opposed the line being built when it was attempting to gain a high price for the sale of its generation assets.

Exhibit 12

THE SOUTH AUSTRALIA—NEW SOUTH WALES INTERCONNECTOR (SNI)

- § TransGrid's proposed interconnector between South Australia and New South Wales (SNI) was expected to provide up to 250 MW of transfer capacity to SA from NSW
- § The consultation and analysis process started in April 1998
- § NEMMCO released its determination that the SNI proposal was justified as a regulated interconnector on 6 December 2001
- § Murraylink Transmission Company applied to the National Electricity Tribunal for a review of that decision
- § The Tribunal agreed that SNI was justified as a regulated interconnector in October 2002
- § Murraylink filed an appeal against the Tribunal's decision in the Supreme Court in Victoria in November 2002
- § The appeal was upheld on 24 July 2003
- § TransGrid lodged an appeal in the Court of Appeals of the Supreme Court of Victoria in August 2003
- § This appeal has yet to be heard

TransGrid has put any further work on SNI on hold

Source: TransGrid's NSW Annual Planning Report 2004

The underlying problem is the current regulatory benefits test

Despite this current regionalisation of the NEM we cannot be certain that more transmission capacity is needed. The key point is that we have no agreed mechanism for establishing whether our current transmission capacity is adequate or not.

The flaw in the current transmission augmentation test used by regulators is that it mainly treats the price separation that results from transmission line congestion as a transfer, and therefore of no economic consequence. That is, there is no benefit ascribed to reducing price separation between regions when assessing if additional capacity should be built. The test instead largely weighs the fuel cost savings between the generation that was forced to run versus that which should have run under merit order dispatch but for the fact that inadequate transmission capacity prevented this occurring.

The problem with not taking account of this price separation is that there are many potential effects on the real economy that are then ignored. With excessive price separation new generation can be brought on too early or in the wrong place, jobs and industry location can be affected and there are many inefficiencies associated with the resulting less liquid contract market.

Recently regulators have tried to factor in price separation but have found this too difficult. In a regulatory test that is trying to be forward looking it is hard to rely

on models that can give very different price separation results based on different assumptions.

It would be better to inject more market price signals into decisions about new transmission. The COAG Energy Market Review recommended that regulators use a more commercial test that would take account of a comparison between the cost of additional transmission and the value the market attributes to removing the risk of price separation in hedge contracts, as measured by the price of a firm financial transmission right.

It would help applying such a test more widely if the market had more regions, rather than simply those which reflect State boundaries as occurs now.

Having regions which reflect the market's 'pinch points' (that is, which reflect major load or generation centres, and so where the transmission capacity is most needed) would also significantly boost system security. The current arbitrarily drawn regional borders greatly complicate NEMMCO's ability to ensure the electricity flows where and when it should without any part of the system becoming overloaded.

2.4 The need to improve the regulation of distribution investment

The owners of distribution and transmission assets have the prices they can charge determined by a regulator because they are monopoly assets. If they were unregulated the owners could effectively 'tax' the community through charging very high prices.

The method of regulation is inevitably controversial. Whatever decision is made there are clear winners and losers.

The key issues we wish to highlight are that:

- The regulation is very intrusive such that the regulator effectively sets the amounts spent on investment and maintenance for each regulated entity
- Some regulators prefer to set revenue caps rather than price caps, and
- The method of regulation is often more focussed on cost reduction than service standards.

Regulators in Australia all use the so called 'building block' approach. This is summarised in Exhibit 13. In effect, the regulator (relying on consultant engineers) determines the prudent and efficient level of expenditure that is allowed, and calculates the revenue that is required to fund that expenditure and earn a return deemed to be appropriate by the regulator.

Exhibit 13

REGULATORY PROCESS OF ASSESSING THE REVENUE CAP AND TARIFFS

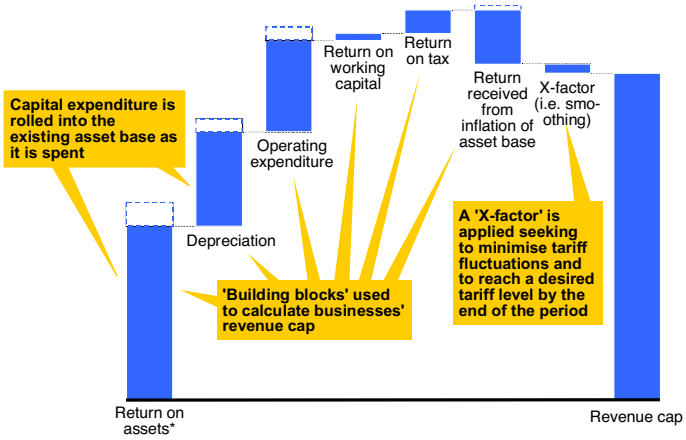
1 Assessment of desired spend levels

- Companies submit their capital and operating expenditure needs for the regulatory period which are provided to the regulator to assess

2 Calculating the revenue cap—'building blocks'

- **Regulators use their assessment to develop the revenue allowed by the companies over the regulatory period using the 'building blocks' framework**

A Company's proposals are always reduced by the regulator's consultants back to a 'prudent and efficient' level



3 Calculate the tariffs

- Using the revenue allowed and the forecast energy consumption (kWh) over the regulatory period, tariffs are calculated going forward

* Returns are calculated at the Regulator's determined Weighted Average Cost of Capital (WACC) multiplied by the determined value of the asset base

The problems associated with this form of regulation were neatly summarised in the recent Review into "Electricity Distribution and Service Delivery for the 21st Century" of July 2004 in Queensland (the Somerville Review). This Review was established after wild storms in January 2004 caused extensive blackouts throughout Queensland. The relevant views are summarised in Exhibit 14.

Exhibit 14

SUMMARY OF RELEVANT EDSD COMMENTS

Problems identified	Observations made about regulatory process which have contributed to the problems identified
• There has been insufficient investment in the network - "...the panel believes that the networks have not had sufficient expenditure outlaid on them" - "There is a need for...catch up expenditure on both networks to bring them back to an acceptable condition"	• The Review acknowledged that there were strong and understandable incentives for the distributors not to exceed the expenditure levels that have been assessed as appropriate by the Regulator. They considered that the current regulatory regime can create an incentive for distributors - "...to invest only in capital improvements to their network up to the amounts allowed by the QCA on which they will earn a rate of return", and - "...not to exceed the QCA's 'building blocks' because (unlike capital expenditure) there is no opportunity to earn revenue from the additional operating and maintenance expenditure in the next regulatory period" • The Review highlighted the inflexibility of a revenue cap regime - "a revenue cap has fundamental limitations in an environment where, in particular, the forecasting of future demand is difficult. The expenditure levels judged appropriate for one level of demand will be inappropriate for others, yet the revenue cap cannot accommodate this" • The Review highlighted that there were no service standards. It expressed concern that the regime utilised in the current Determination focuses only on rewarding distributors for cost reduction, and not for service performance

Source: Electricity Distribution and Service Delivery for the 21st Century, July 2004

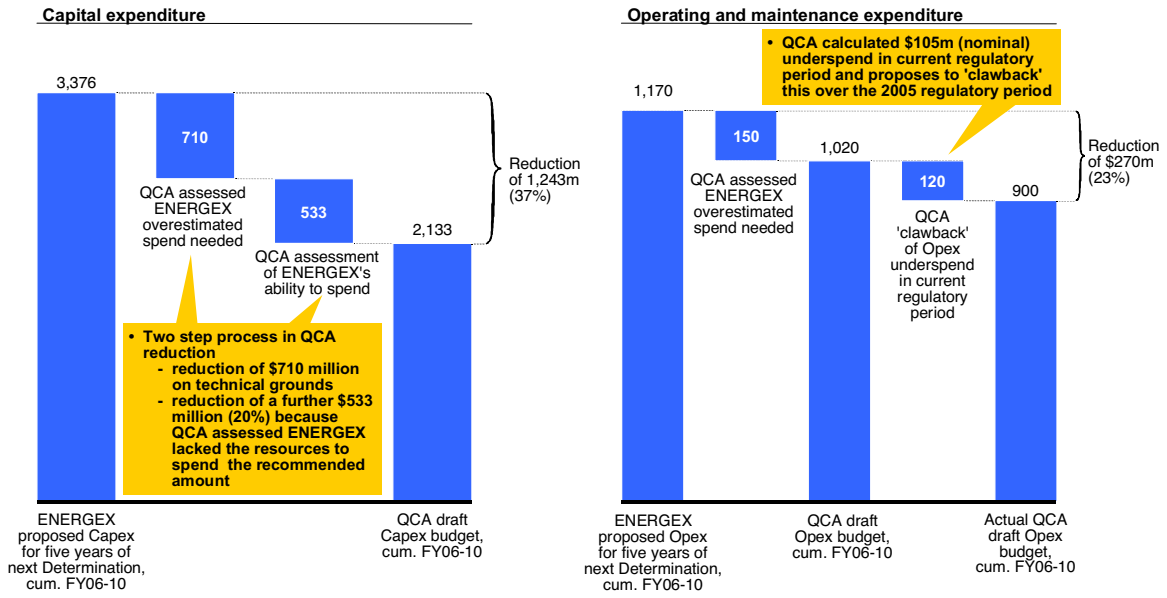
The Review explicitly highlighted the three problems we are referring to. In particular:

- It is the Regulator who effectively sets the levels of capital and maintenance expenditure that will be undertaken, as no commercial entity can exceed them for very long without facing financial difficulty
- Using a revenue cap means that there is no additional money if demand is higher than expected which requires new services to be provided
- Some regimes provide clear financial incentives for cost reduction but not for achieving set service standards.

The first problem can be illustrated by using a recent draft Determination of the Queensland Competition Authority (the QCA) in relation to ENERGEX, which owns and maintains the electricity distribution network in South East Queensland (Brisbane, the Gold Coast). The effect of this Determination is shown in Exhibit 15. In effect the QCA has reduced the capital expenditure by 37% from the level ENERGEX proposed, and the operating expenditure by 23%. Of course, we should note that the extent of the difference between what was requested and given is unusually large and so not representative of other regulatory decisions, the Determination is still a draft, and the QCA did provide mechanisms for ENERGEX to request more capital funds particularly if it could show that it could resource a higher spend.

Exhibit 15

QCA DRAFT DETERMINATION (2004) ON ENERGEX'S CAPITAL AND OPERATING EXPENDITURE
2004 $ Millions (real)



Source: QCA Draft Determination - Regulation of Electricity Distribution, December 2004; PJPL analysis

These large disparities between the expenditure that is requested and allowed reflect many things. In the case of capital, the differences reflect opposing views on what is prudent to spend across a range of spend categories and what ENERGEX is capable of spending. These judgements go to the heart of ENERGEX's network condition, the need for particular services and ENERGEX's recruitment and contracting plans. In the case of operating expenditure they reflect the difference of view on the need for a range of particular tasks or the efficiency with which they can be undertaken and whether past spend levels are the result of particular efficiencies or a simple underspend.

The point is **not** that ENERGEX or the QCA is right in its views. The key point is that this process may not be the best way to determine how much to spend on our electricity networks (or railways, ports, and so on).

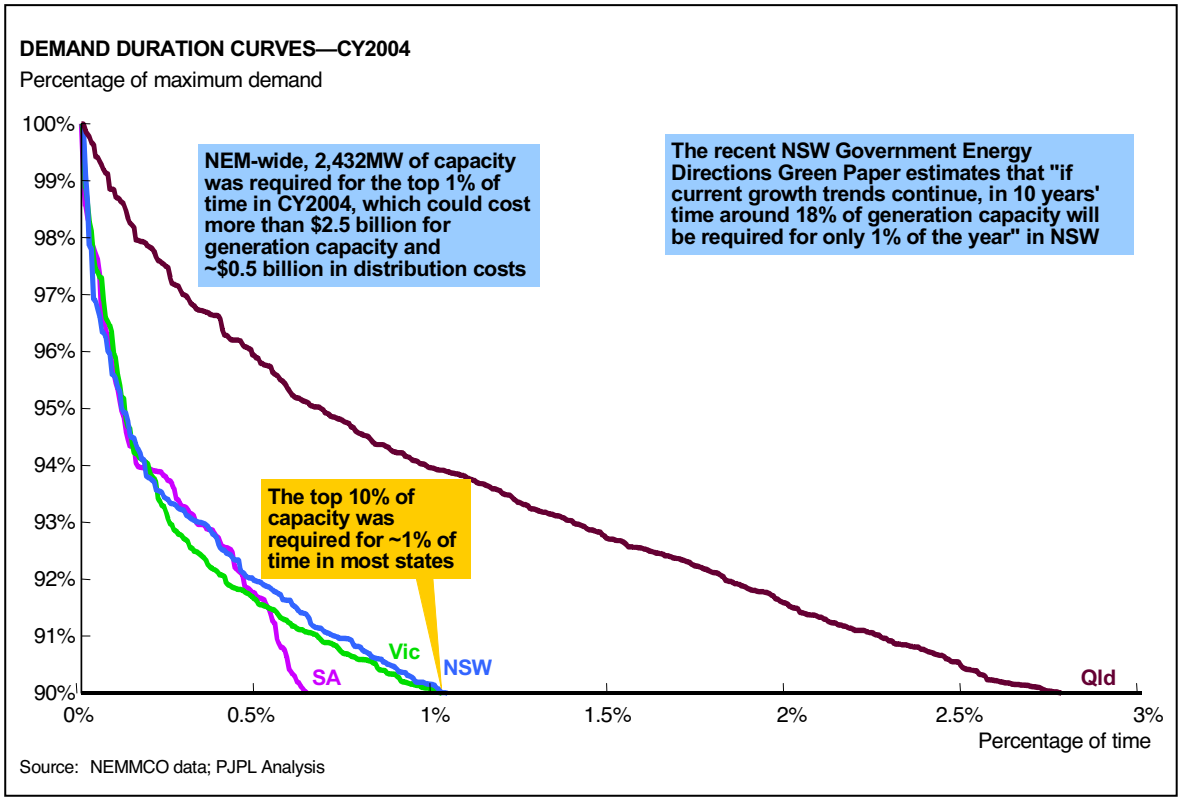
These issues are both complex and important. There is no quick fix. We believe more work is needed to assess the merits of a less intrusive price setting process. This could see a price path based on wider industry standards rather than the precise needs of each regulated entity, or a regulatory mechanism with much greater incentives to achieve certain service standards.

It is important to get these issues right. Poor regulatory processes could **either** unnecessarily limit investment, **or** see users pay prices that are higher than the underlying economics would suggest. Both outcomes can seriously damage our economy.

2.5 The lack of price signals to curb peak demand

A very large proportion of the energy infrastructure in each State is used for only small periods of time. This is shown in Exhibit 16. In most States the top 10% of capacity was required for ~1% or less of the time in 2004. Indeed, NEM-wide, 2,432 MW of capacity was only required for 1% of the time in 2004 at a cost of ~$3 billion.

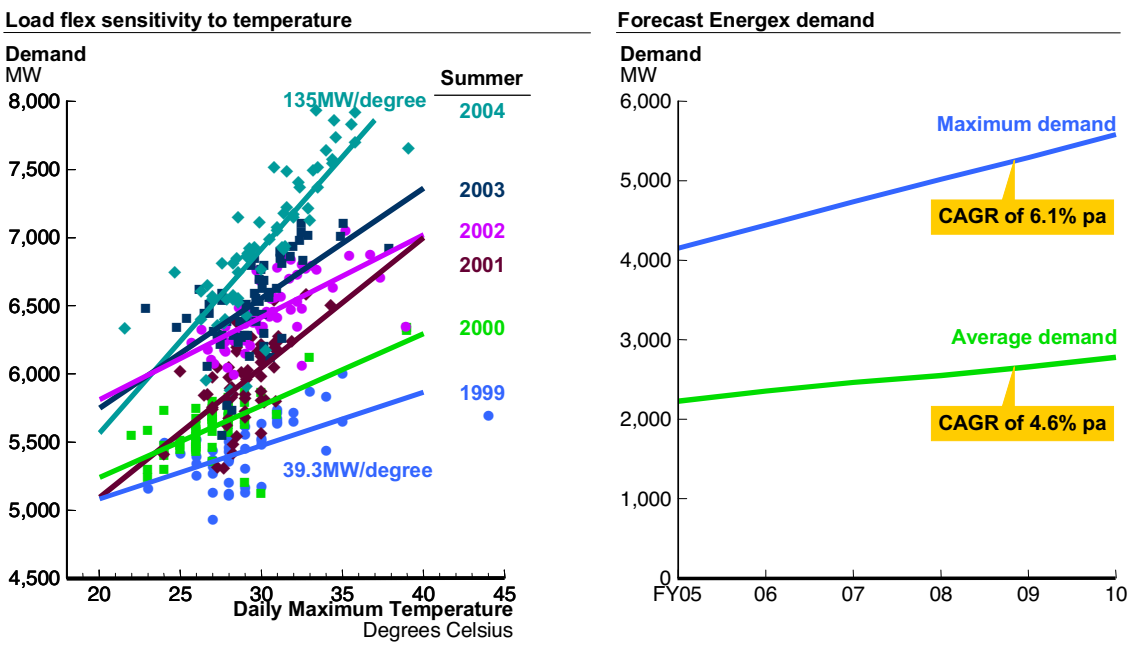
Exhibit 16



This peakiness of electricity use is in part caused by the sensitivity of load to temperature. Exhibit 17 shows that, over time, the electricity load in Queensland is responding much more to each increase in temperature (the slope of the line is steepening in the left hand graph). This sees the maximum demand for electricity growing much faster than the average demand. This is occurring in Queensland because it has currently relatively low air conditioning penetration levels but it is fast catching up with other States. When it does its load duration curve shown in Exhibit 16 it may well resemble that in other States.

Exhibit 17

GROWING SENSITIVITY OF QUEENSLAND SUMMER LOAD TO TEMPERATURE



Source: NEMMCO; Bureau of Meteorology; PJPL analysis; Submissions to the QCA in its recent draft Determination in relation to ENERGEX

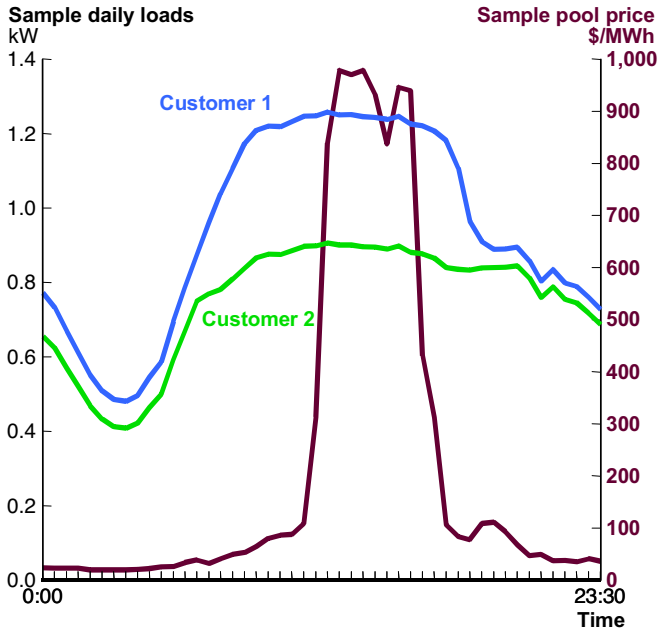
The underlying problem is that there are no price signals to indicate to the vast majority of consumers the cost of consuming electricity at certain high cost times. There is no ability to use price signals to smooth demand a little. When the weather is hot, and air conditioners are being used, most consumers do not receive any price signal to, for example, avoid using other appliances (dishwashers, pool pumps) at the same time.

This lack of cost reflectivity also means that some consumers are heavily subsidising others. This is illustrated in Exhibit 18. Two customers, one with air conditioning and one without, each pay the same unit rate for energy. The one with air conditioning will pay more only because of higher usage. They do not pay more to reflect the fact that they are consuming much more energy at times when the network is likely to be most highly used and under stress.

Exhibit 18

COST REFLECTIVE PRICING AND SUBSIDIES

"The Energy Action Group said that because the costs are shared by all consumers, households without air-conditioners were subsidising those with air-conditioners by about $190 a year"*



* The Age, 28 January 2005

If interval meters were installed for all customers this would allow time-of-use pricing which is not only fairer, but would help spread demand more evenly. Interval meters allow half-hourly load data to be captured rather than just the total consumption currently captured by accumulation meters. Victoria has recently mandated a rollout of interval meters to all customers but it is the only State to have done so.

If interval meters were installed both distributors and retailers could offer new forms of pricing. Distributors could, for example, charge prices that vary with temperature levels, and retailers could price by time of use. Of course, interval meters would need to be mandated, with the costs recovered through regulated distribution charges, because the users who are most benefiting from the current system are unlikely to want to pay for interval meters to be installed.

2.6 Concluding comments

There are currently many impediments to the appropriate signals for investment in all parts of the electricity value chain. While there has been focus on some electricity policy issues by the relevant Commonwealth and State Ministers in recent years, progress on all of the above issues could be fairly said to have stalled.

CHAPTER 3

ADDRESSING THE OBSTACLES TO AN EFFICIENT INTER-CAPITAL FREIGHT SYSTEM

CHAPTER 3

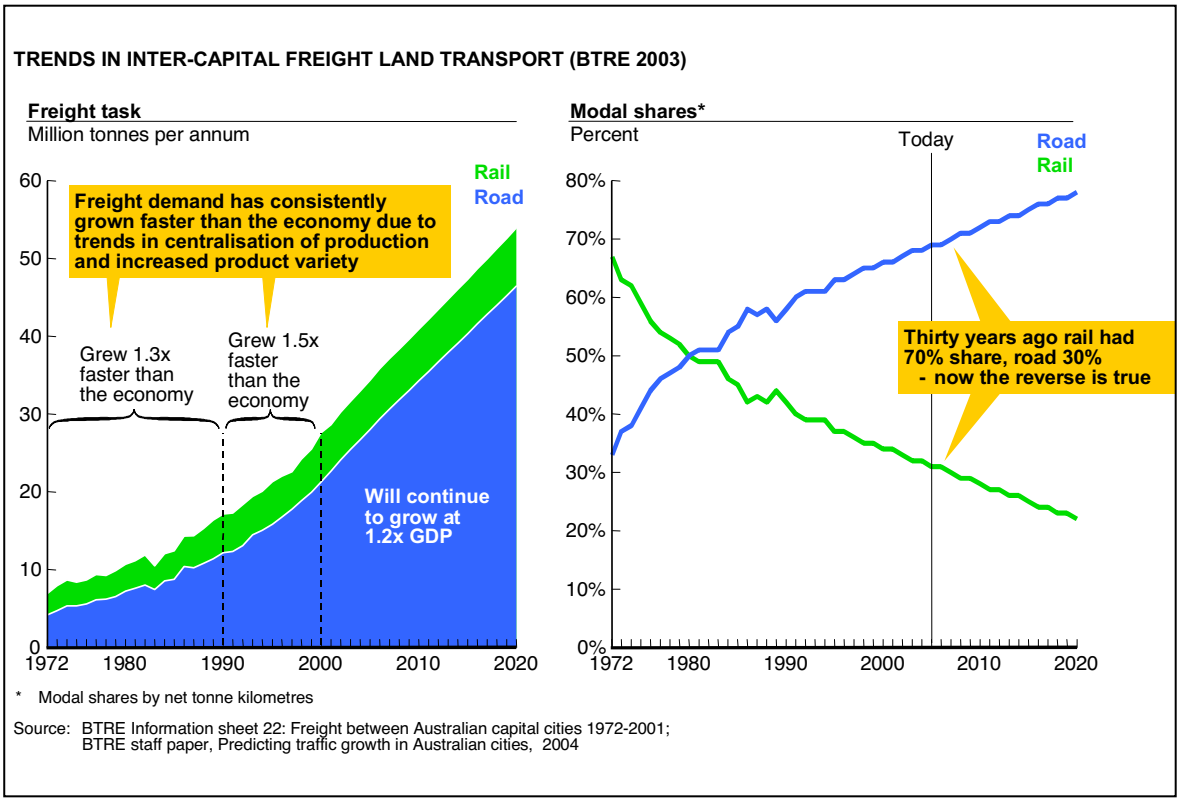
Addressing the obstacles to an efficient inter-capital freight system

3.1 Highlighting the problem

In a country as large as Australia, with its key population centres separated by such large distances, it is vital that we have an efficient inter-capital freight system. This goes to the core of the economy's entire cost structure.

As if to emphasise this point, between the year 2000 and 2020 inter-capital freight has been forecast by the Bureau of Transport and Regional Economics (BTRE) to double. As shown in Exhibit 19 the BTRE believes that the next 20 years will resemble the last 30 years in that freight demand will continue to grow faster than the economy as a whole. While this trend cannot go on forever it reflects the increasing centralisation of production sources and a desire by consumers for increased product variety.

Exhibit 19



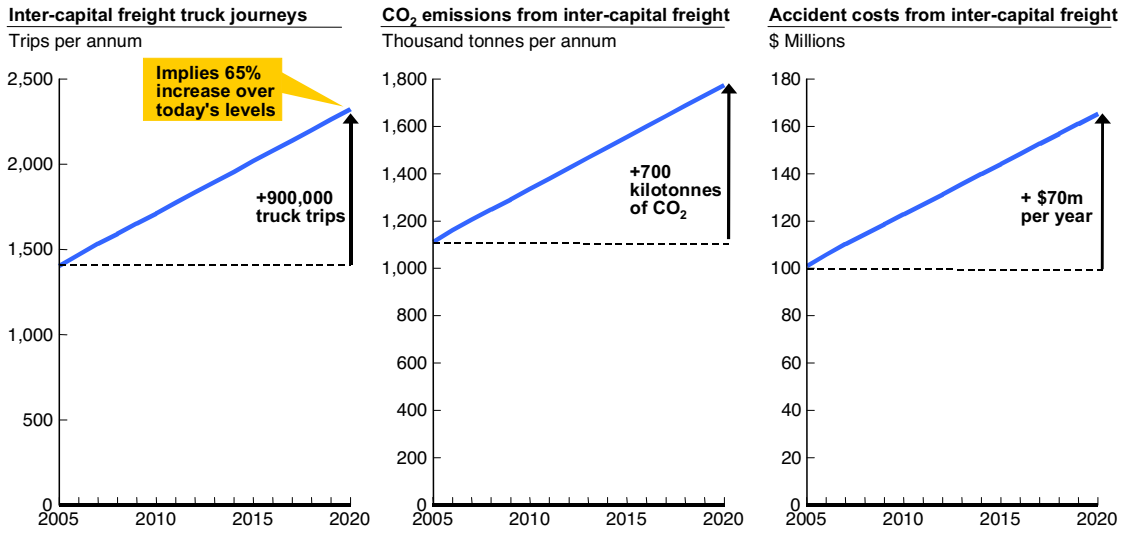
The other major trend in inter-capital freight is far more dramatic. While 30 years ago rail held a 70% share of inter-capital freight by net tonne kilometres, with

road having a 30% share, today this position is reversed. As shown in Exhibit 19 by 2020 the BTRE predicts that road will have an 80% share with rail at 20% as the trend of the past 30 years continues.

This forecast growth in road freight will have important consequences. It will, for example, increase the number of trucks on our inter-capital roads by 65% over the next 15 years. As shown in Exhibit 20 this will bring associated environmental and safety issues.

Exhibit 20

IMPACT OF GROWTH IN FREIGHT ON ROAD TRAFFIC AND CO_2 EMISSIONS — BUSINESS AS USUAL

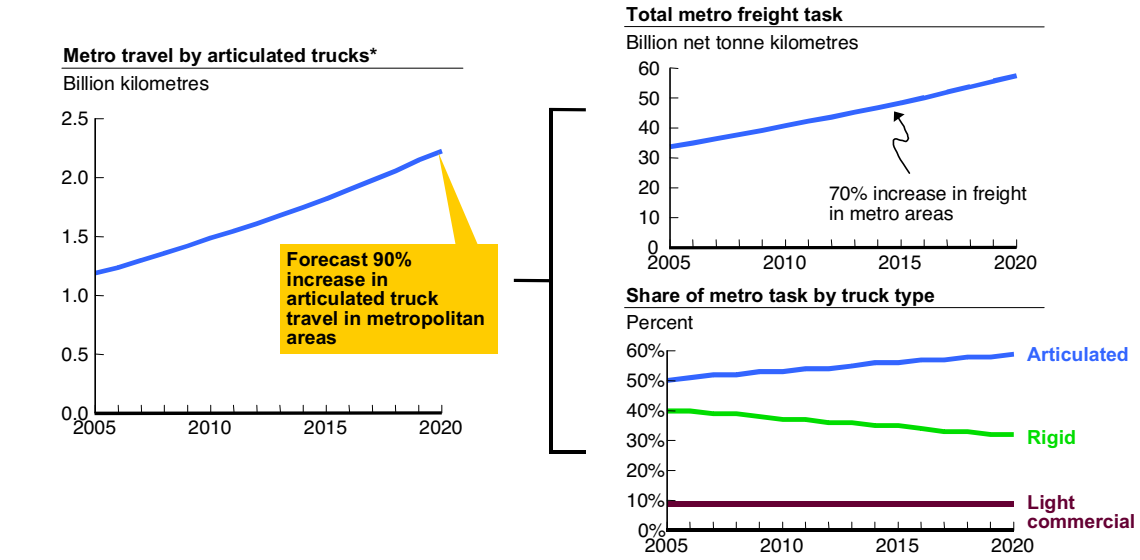


Source: BTRE Information sheet 22: Freight between Australian capital cities 1972-2001;
Queensland Rail Greenhouse Gas studies undertaken by Affleck Consulting, 2002;
BTRE Working Paper 40 - Competitive Neutrality Between Road and Rail, 1999; PJPL analysis

The effect on our cities is forecast to be even larger. As shown in Exhibit 21 the BTRE expects a 90% increase in articulated truck travel in metropolitan areas over the next 15 years. This is due to the rising freight task and the growing share of road freight taken by articulated rather than rigid or other trucks.

Exhibit 21

PROJECTIONS OF METROPOLITAN FREIGHT TRAFFIC GROWTH

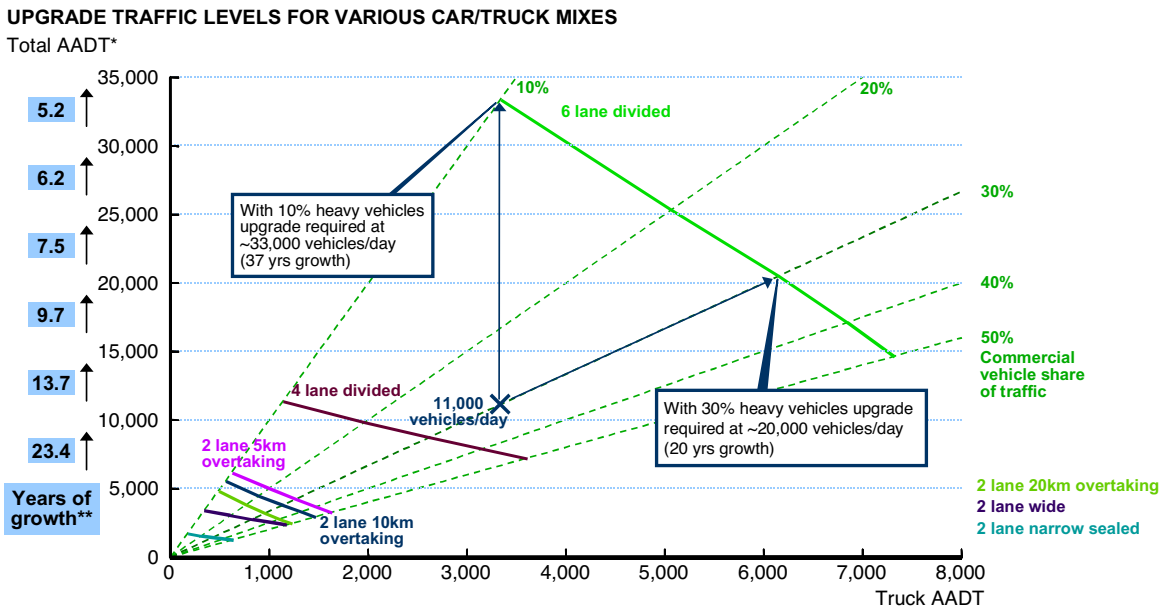


* Assumes average load of ~15 tonnes

Source: David Gargett, Predicting traffic growth in Australian cities, BTRE staff paper 2004

This rapid growth in road transport will also drive a much larger expenditure on roads than would otherwise be required. This will occur because more road capacity will be needed and because stronger and so more expensive pavements are required to withstand the additional loads being carried. This can be seen from Exhibit 22 which shows in a conceptual sense, using BTRE methodology, how a higher proportion of heavy vehicle traffic affects the timing of road construction. With a 10% share of traffic comprising heavy vehicles a six lane divided road may not be needed for 37 years, whereas with a 30% share of traffic it would be required within 20 years.

Exhibit 22



* Annual Average Daily Traffic
** 3% annual growth rate assumed

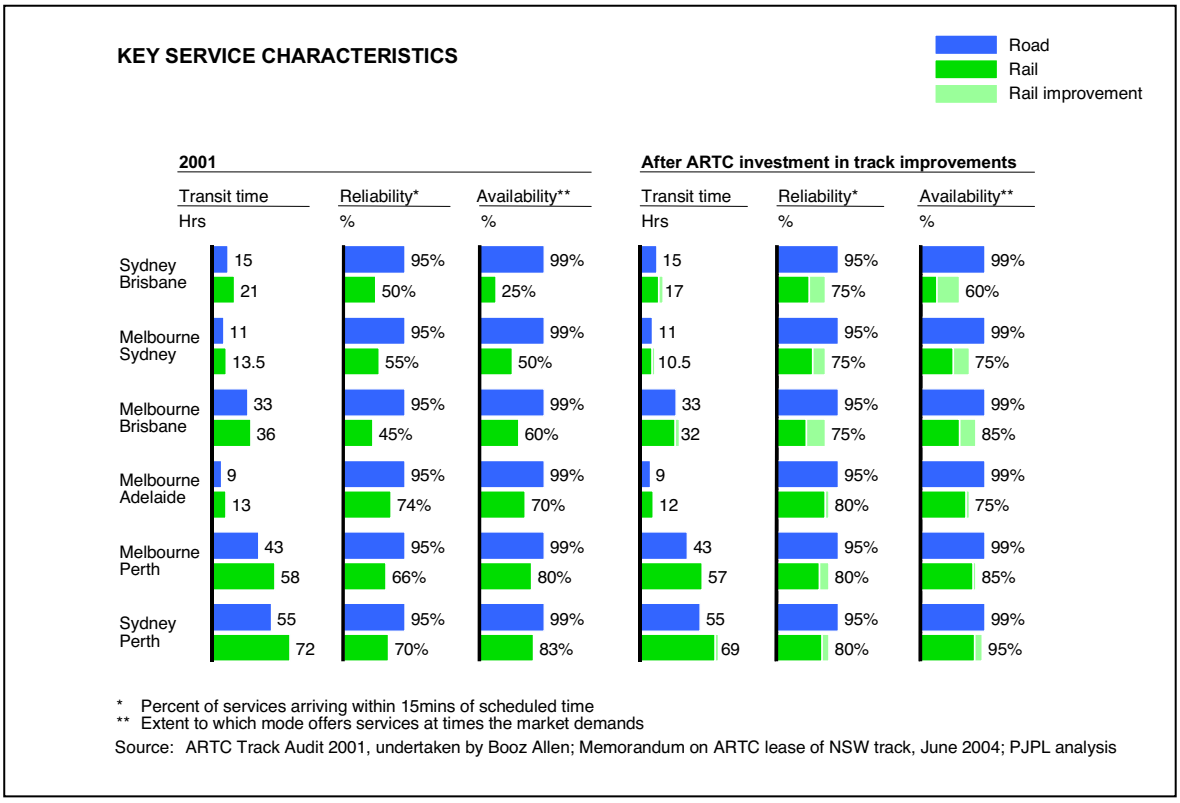
Source: BTRE Working Paper 35: Roads 2020, 1999; PJPL analysis

At the same time as the above modal shift is occurring our rail system is in many places in disrepair or bottlenecked in key areas. In an immediate sense this can be seen in the speed restrictions placed on parts of rail track, but in a more fundamental sense it can be seen in poor track configuration.

Indeed, when the key comparative indicators are examined it can be seen that rail is losing share because of very poor transit times, reliability and the extent to which rail offers services at times the market wants.

On the North South routes rail's reliability and availability has recently only been about half that of road. This is shown in Exhibit 23 which also shows a better relative performance by rail on the East West routes. It is no surprise then to notice that rail's North South modal share is 16%, while it is around 60% on the East West routes. Note that the performance of the North South track will improve with the planned investment by the Australian Rail Track Corporation (ARTC), but it will still remain well below that of road.

Exhibit 23



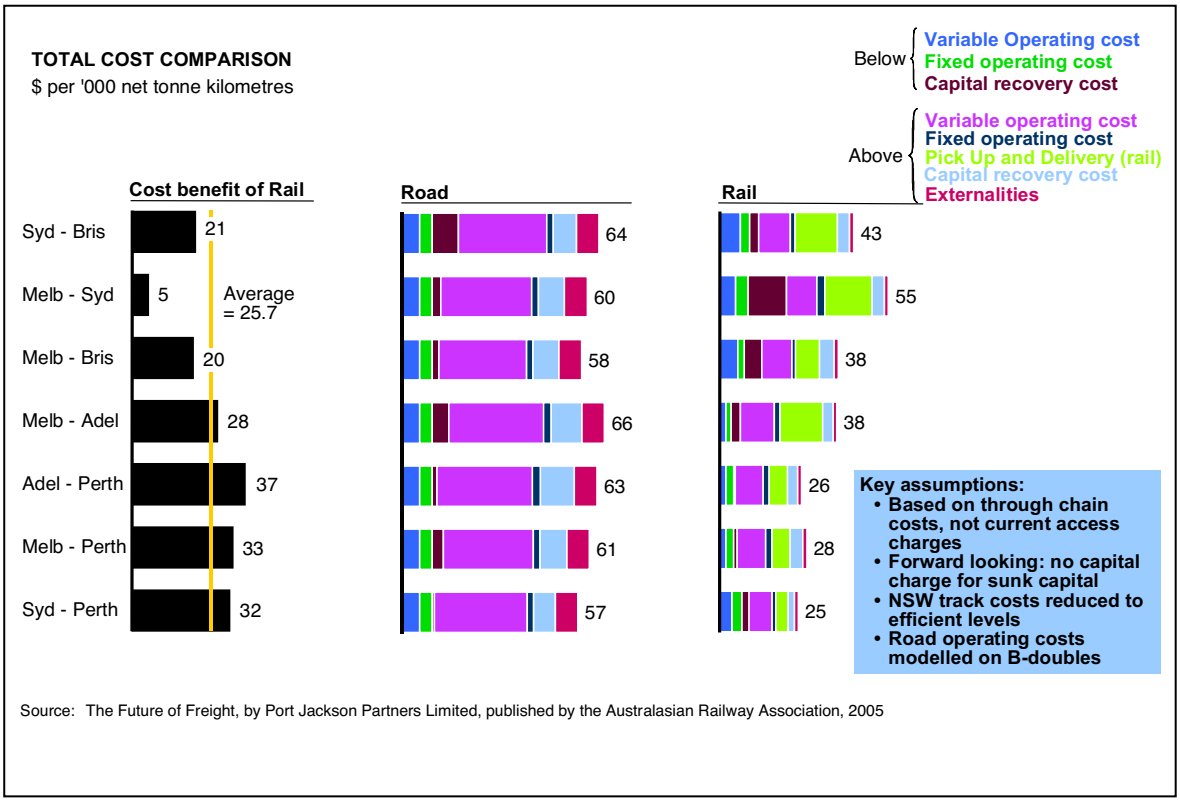
* Percent of services arriving within 15mins of scheduled time
** Extent to which mode offers services at times the market demands

Source: ARTC Track Audit 2001, undertaken by Booz Allen; Memorandum on ARTC lease of NSW track, June 2004; PJPL analysis

It would not be a cause for concern if these trends reflected the underlying economics of road and rail transport. The facts are, however, that they do not.

Indeed, efficient rail is the lowest cost mode of transport on all inter-capital corridors, particularly East West but also North South. This conclusion came from a report prepared by PJPL for the Australasian Railway Association (ARA) titled "The Future for Freight". When the truck and train capital and operating cost picture is combined with the road and track operating and capital cost picture, and when allowance is made for rail's lower externality (mainly accident) costs, rail has a material cost advantage over road. This is shown in Exhibit 24. This analysis was based on the through chain costs, not the current access charges, and it assumes that NSW track infrastructure costs would be reduced to efficient levels to meet the public commitment made by the new track owner, the ARTC.

Exhibit 24



Source: The Future of Freight, by Port Jackson Partners Limited, published by the Australasian Railway Association, 2005

Why is the lowest cost mode of transport mode moving so little of our inter-capital freight?

The answer can be found in poor public transport policy.

This is not to say, however, that transport policy has been neglected over the last 15 years. In the early 1990s reform agendas in both rail and road were key planks of National Competition Policy (NCP). The Commonwealth and the States agreed, for example, to create National Rail from the various state freight entities, so ending the dysfunctional system of different rail freight operators in each State. They also agreed to take a national approach to road freight vehicle operation and registration, driver licencing and road user charging.

These reforms represented fundamental change. They achieved a national approach to both road and rail so that there could be one freight market in Australia and not many.

Looking back, however, these changes only provided the platform for the reforms that are now required. We can now see that the changes in the 1990s addressed each transport mode on its own, and left untouched the key issue of how the policies for each fit together.

An analysis of the inter-capital freight market today leads to the following important conclusions.

- There are at least three major public policy problems in terms of how current policies for both road and rail work in combination
- The effect of this poor public policy is to distort significantly the price/service offering of rail compared to road to the detriment of the efficiency of our inter-capital freight
- We should move now to undertake significant land transport reform and to remove some key bottlenecks in our inter-capital freight system.

We shall address each point in turn.

3.2 The three major public policy problems

These problems can be summarised as follows.

- The heaviest, longest travelling trucks are undercharged for their road use
- While rail user charges are set after allowing for a return on past sunk capital, road user charges are not
- Different assessment criteria are used when judging rail and road infrastructure investment.

It is important to explain each of these points in some detail.

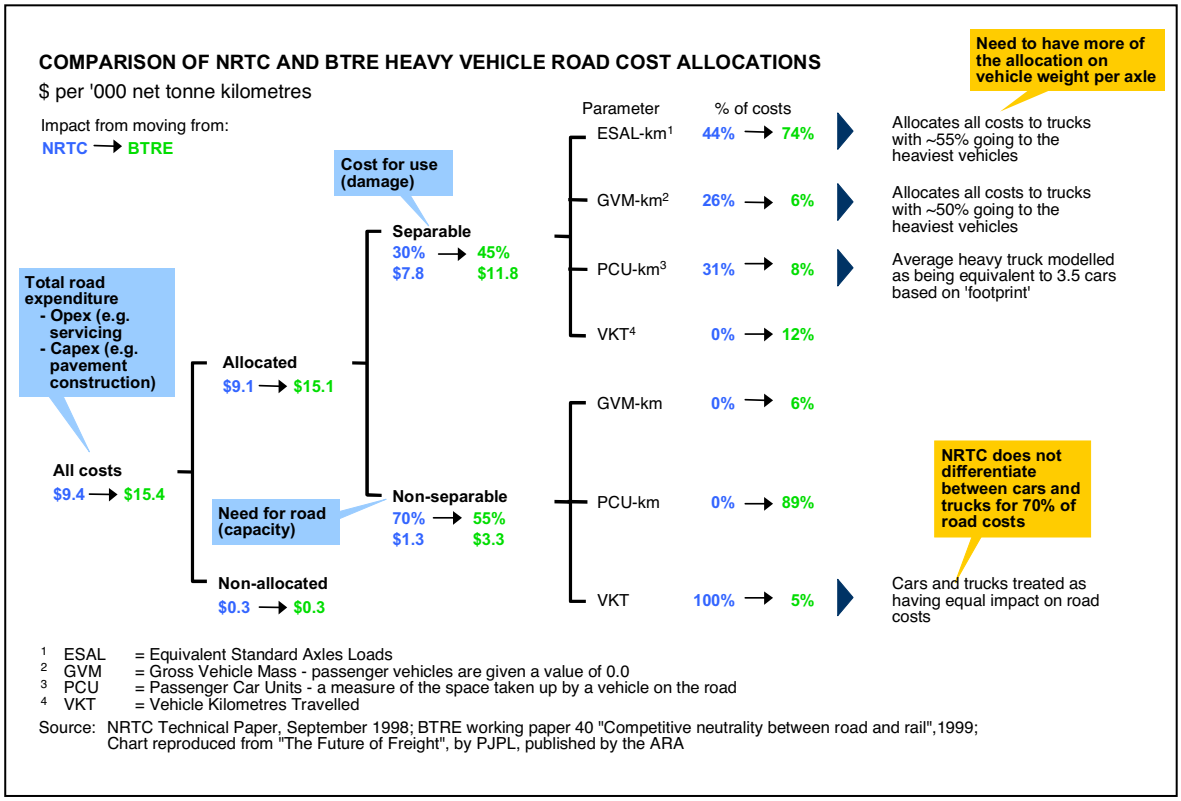
3.2.1 The heaviest, longest travelling trucks are undercharged for their road use

This first issue is widely acknowledged and can be simply demonstrated.

In Australia, all road expenditure is allocated to cars and trucks according to the expenditure caused by their usage as determined by the National Road Transport Commission (NRTC – now the National Transport Commission). The expenditure allocated to trucks is recovered by registration and fuel charges. The problems with this allocation system cause much of the undercharging.

The problems with the current allocation system are perhaps best shown by a comparison between the NRTC's approach and that taken by the BTRE. The two approaches are contrasted in Exhibit 25.

Exhibit 25



1 ESAL = Equivalent Standard Axles Loads
2 GVM = Gross Vehicle Mass - passenger vehicles are given a value of 0.0
3 PCU = Passenger Car Units - a measure of the space taken up by a vehicle on the road
4 VKT = Vehicle Kilometres Travelled

Source: NRTC Technical Paper, September 1998; BTRE working paper 40 "Competitive neutrality between road and rail",1999; Chart reproduced from "The Future of Freight", by PJPL, published by the ARA

There are several important differences in the two approaches.

As one example, the current allocation regime sees 70% of all costs labelled as 'non-separable' and so not attributed to any particular vehicle. Non-separable costs are to cover the underlying need for the road while separable costs cover the damage caused by an individual vehicle. These non-separable costs are then allocated by vehicle kilometres travelled, so that a truck used for inter-capital haulage is treated the same as a car. Yet such a truck should be seen as 3.5 times a car based on its 'footprint', or larger occupation of road space.

As another example, the latest research on international approaches to cost allocation would see separable costs higher than 30%, and pavement damage more dependent on vehicle weight per axle than is currently assumed by the Australian allocation methodology.

Australia's cost allocation method is out of step because the aim in the early 1990s was to gain a uniform charging system across States and to charge trucks more of the costs they impose in fairness to car owners. It was sufficient to move in the right direction. A desire to achieve a level playing field between road and rail freight, however, requires a more accurate method of cost allocation.

Another problem is also widely acknowledged. It is that the current charging mechanisms used in Australia see charges decline with mass and distance. This favours the heavier, longer travelling trucks over other trucks, yet it is the former that compete with rail on the inter-capital corridors. Both the NRTC and the BTRE seem to agree on this.

- *"For road transport there is a fixed annual registration charge and a variable fuel charge … this charging structure does not closely match the amount paid to the individual vehicle's marginal cost of road use. Highly utilised vehicles and those with good fuel consumption rates pay too little"*
  NRTC 3rd Heavy Vehicle Pricing Determination Issues Paper, 2003

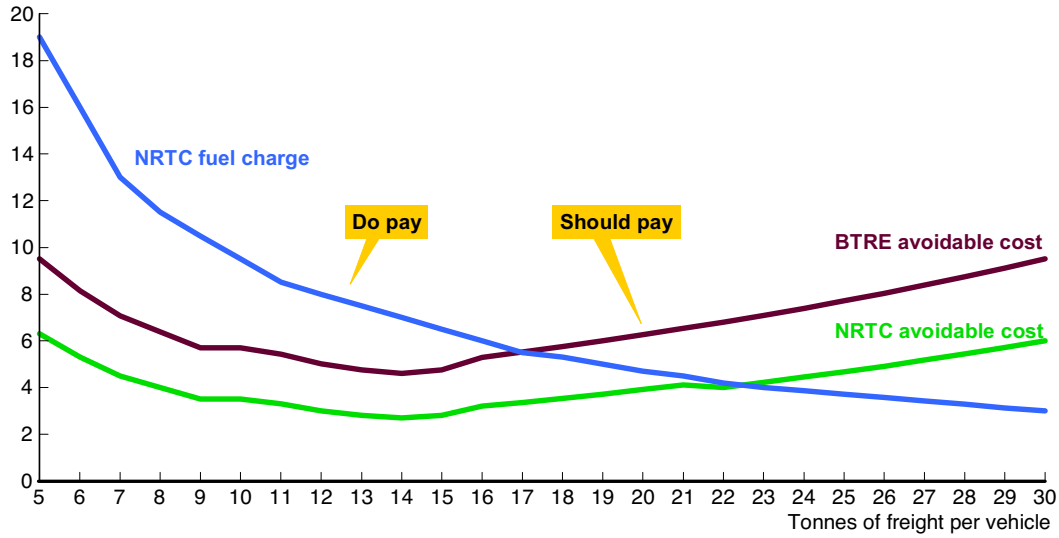
- "*BTE results indicate that heavily laden vehicles are currently undercharged, lightly laden vehicles are overcharged and the current imputed fuel excise credit does not recover the road wear costs caused by heavy vehicles. Some form of mass distance charge would be more efficient"*
  BTRE Working Paper 40, "Competitive Neutrality between Road and Rail", 1999

The effect of this has been illustrated by the BTRE. This is shown in Exhibit 26.

Exhibit 26

'AVOIDABLE'* ROAD WEAR COSTS AND CHARGES — SIX AXLE ARTICULATED TRUCK

$ per '000 net tonne kilometres



* Avoidable costs are those resulting directly from traffic interactions with the highway - predominantly wear and tear on the road surface

Source: Bureau of Transport and Regional Economics, Working Paper 40: Competitive neutrality between road and rail, 1999; Chart reproduced from "The Future of Freight", by PJPL, published by the ARA

Currently several European countries are progressively introducing mass distance charging. By charging based on mass and distance they are directly addressing this problem.

3.2.2 While rail user charges are set after allowing for a return on past sunk capital, road user charges are not

The second public policy problem is that while rail user charges are set after allowing for a return on past sunk capital, road user charges simply have to cover each year's current investment. The different policies are summarised in Exhibit 27. With the current road access charging regime which commenced in the early 1990s there is no allowable return in road user charges on the initial sunk investment. Rail's access prices cover a return on all past investments that are revalued every five years to achieve a Depreciated Optimised Replacement Cost, or DORC valuation.

Exhibit 27

ACCESS REGIME COMPARISON—ROAD VERSUS RAIL

Road	Rail (ARTC Example)
"Instead of separately costing past efforts to construct roads and future maintenance requirements, it is assumed that current expenditure provides a reasonable proxy for annualised costs of providing and maintaining roads for the current vehicle fleet. This approach is known as the PAYGO, or pay-as-you-go, approach to setting cost-allocation targets" ***NRTC, "Updating Heavy Vehicle Charges", September 1998***	"The Ceiling Limit means the Charges which, if applied to all operators of a Segment or a group of Segments would generate revenue for ARTC sufficient to cover the Economic Cost of that Segment or group of Segments" Economic Costs include: • Segment specific costs and an allocation of non-segment specific costs • Depreciation of segment specific and non-specific assets • A return on segment specific and non-specific assets based on DORC (revalued every five years) ***ARTC Access Undertaking, May 2002***

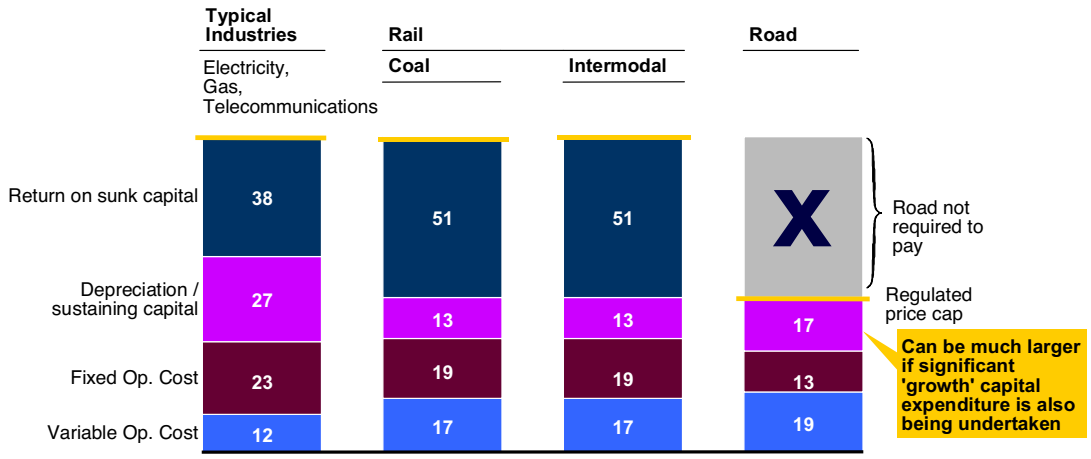
Source: Chart reproduced from "The Future of Freight", by PJPL, published by the ARA

The effect is that rail access charges can be set to recover more than road access charges. While Exhibit 28 illustrates these differences the obvious question is why would two competing industries be subjected to different access charging principles?

Exhibit 28

COMPARISON OF ACCESS PRICING POLICY REGIMES*

Percent of total



* Estimate for "Typical Industries" taken from the IPART determination for the Regulation of NSW Electricity Distribution Networks (pg 77); Coal assumed to have same distribution by cost component as Intermodal; Road sunk capital assumed to be same proportion of total access fee as for Intermodal

Source: Chart reproduced from "The Future of Freight", by PJPL, published by the ARA

The setting of road access charges is unique: all other infrastructure user charges are set allowing a return on past investment. The road user charging approach was, of course, put in place prior to the formulation of access regimes for all other infrastructure.

3.2.3 Different assessment criteria are used when judging rail and road infrastructure investment

The third public policy problem is that different assessment criteria are used when judging rail and road infrastructure investment. Rail projects are usually assessed on financial criteria, whereas road investment is assessed using economic cost benefit criteria. One key difference, therefore, is that rail investment must be justified by considering only the benefits to the investor, whereas road investment can be justified by considering wider benefits such as reduced travel time and traffic accidents. The Commonwealth has recently acknowledged the importance of this difference, as shown in Exhibit 29.

Exhibit 29

ROAD AND RAIL HAVE BEEN SUBJECT TO DIFFERENT INVESTMENT CRITERIA

The Auslink Green Paper (2002) raised the issue of:

"**different assessment criteria for road and rail infrastructure investment**.
Rail infrastructure projects are commonly appraised on financial rather than economic cost-benefit criteria. Financial analysis presents higher hurdles than economic analysis by excluding benefits for organisations or groups and only considering those for the investor. Financial analysis also has to take account of corporate taxation and does not include consumers' surplus gains, which can make an important difference for large lumpy investments."

... and the subsequent White Paper recognised that:

"**Rail infrastructure investment has been largely ad hoc**. The arrangements for the planning and funding of rail network infrastructure reflect, in large part, the origin of the rail network in separate State-based rail systems. These have been independently run and managed with funding decisions historically driven by local needs.
The overall amount of funding available for rail infrastructure has also been severely limited."

The effect, as recently also acknowledged by the Commonwealth, is that … "the overall amount of funding available for rail infrastructure has also been severely limited".

3.3 The effect of this poor public policy

The effects of the above three public policy problems are profound. They go to the heart of the competitive dynamics between road and rail freight on the inter-capital corridors.

The most obvious effect is that day-to-day choices between road and rail freight are distorted, as the road and rail price differences do not reflect the underlying cost differences.

Equally pervasive, artificially low road user charges limit what rail track owners can charge, because of the direct road and rail competition. This makes rail track investment financially unattractive, and so reduces track investment, which means poor rail service levels as the track is often of poor standard.

Further aggravating relative investment levels are the different assessment criteria. If all the externality benefits of both road and rail were factored into investment decisions this would favour rail investment. Rail transport causes fewer environmental and safety problems than road transport.

The effect of this poor transport public policy is, therefore, to distort significantly the price/service offering of rail compared to road. Rail is losing market share for the wrong reasons.

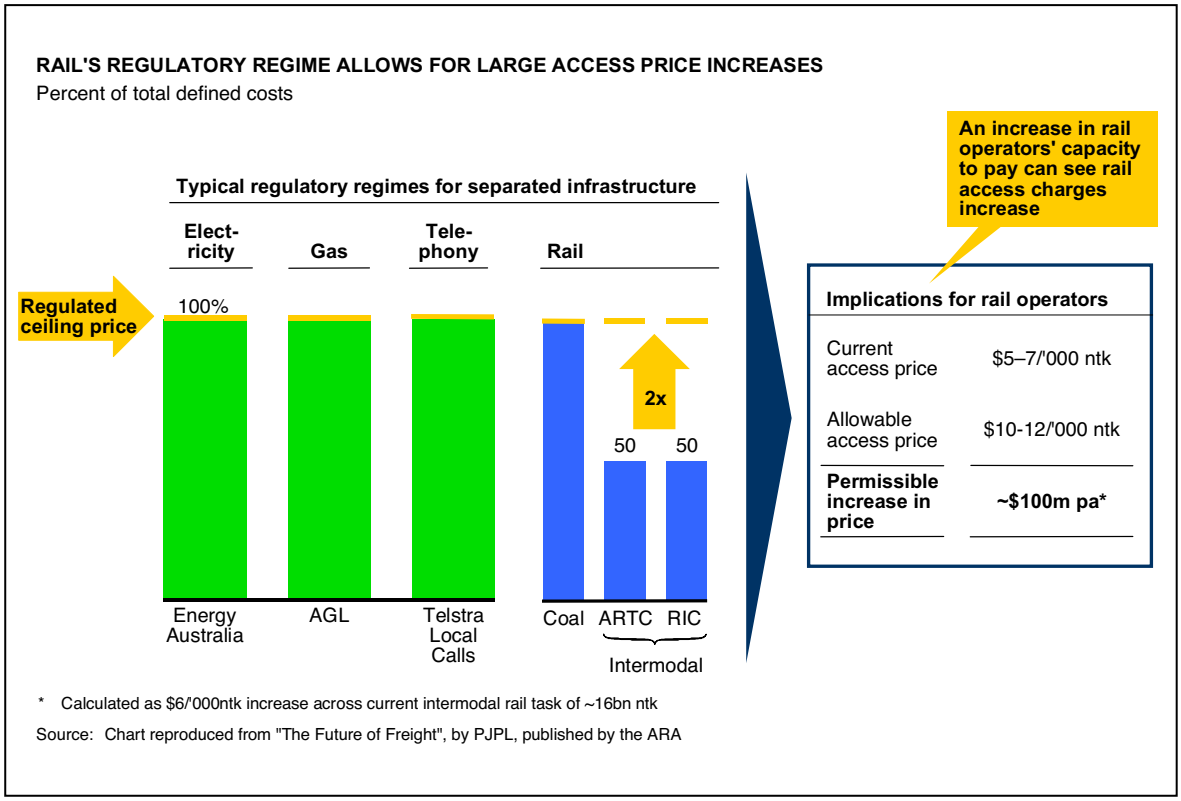
A coming, even deeper problem

Access to inter-capital rail freight is priced at levels allowed by competition from road. Given all of the above points, such as the low pricing for inter-capital road access charges and the different access charging regimes, on inter-capital routes rail access fees never reach ceiling levels.

This creates a major problem.

Under the current regulatory conditions the below rail access providers could increase access fees significantly over time. Their only limit in doing so is the current low profitability of rail operators. Access pricing has been held down by the ARTC to assist the rail industry to gain market share, even though the Australian Competition and Consumer Commission (ACCC) has indicated that these revenue levels may not sustain the infrastructure. As shown by Exhibit 30 the present rail access prices can, in the ARTC's jurisdiction, be more than doubled within the limits established in the ACCC Access Undertaking.

Exhibit 30



This ability to increase user charges with the capacity of operators to pay is unique to rail. All other infrastructure with access regimes sees user charges set at the

regulated ceiling level. This does not occur in rail because user charges are limited by direct competition with road.

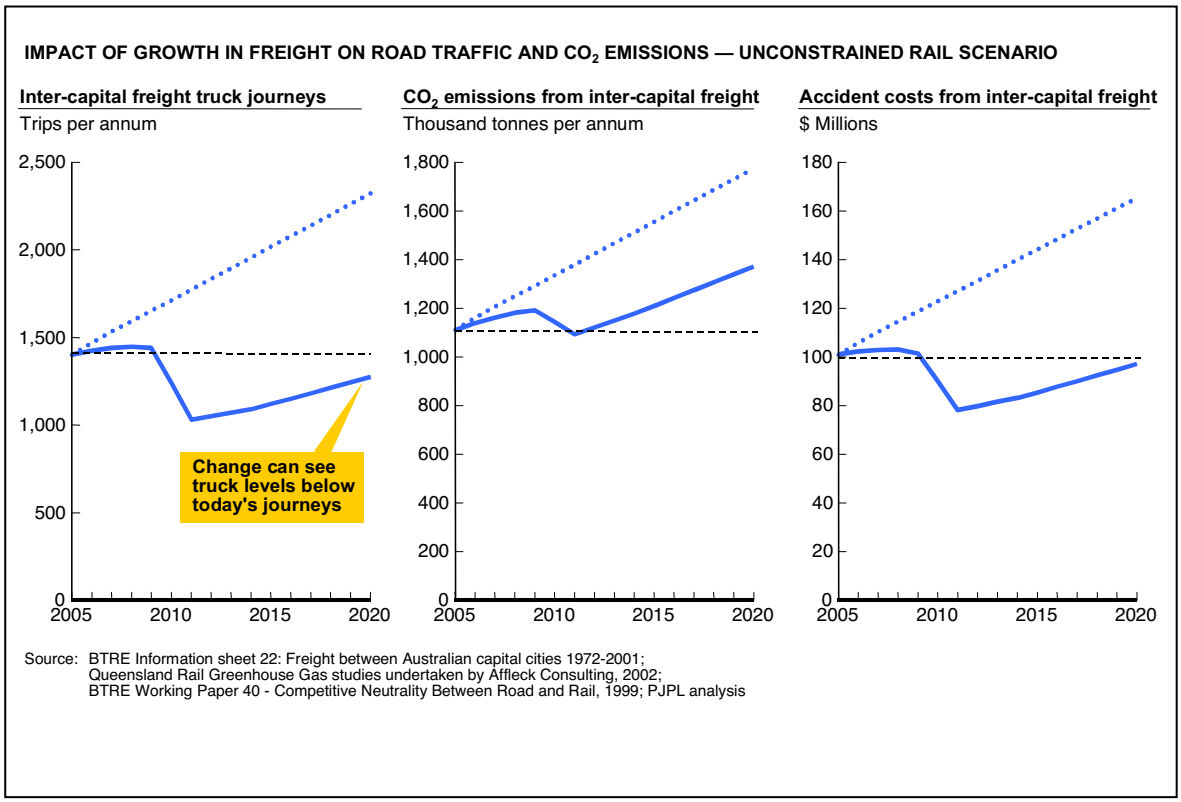
This issue has the potential to limit severely the level of investment by commercial rail operators. The current rail access regime can, in its effect, extract all additional profit from new rail investment and leave rail operators with profits at stay-in-business levels.

Whatever the stance or intentions of track owners, the train operators will not be able to risk large investments and take business risks in freight markets while access fees can rise to take the incremental profits they create from improved service or increased investment.

3.4 The need for significant land transport reform

We believe that with significant reform rail can dramatically increase its share of intermodal freight. Rail could, for example, increase its North South market share to the levels currently achieved on the East West routes, or to 60%. As this increase would come on heavily trafficked routes the effects could be large, as shown in Exhibit 31.

Exhibit 31



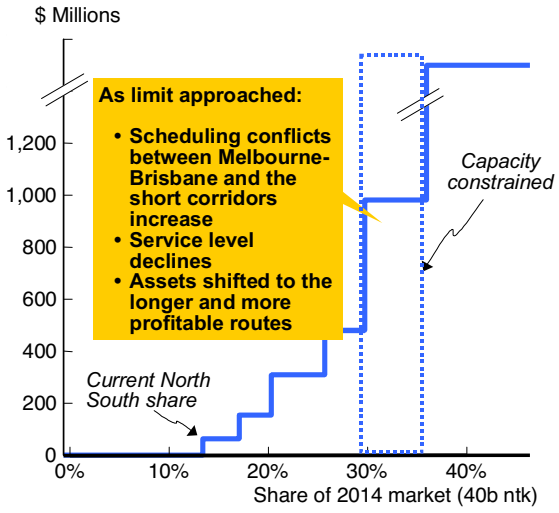
Source: BTRE Information sheet 22: Freight between Australian capital cities 1972-2001;
Queensland Rail Greenhouse Gas studies undertaken by Affleck Consulting, 2002;
BTRE Working Paper 40 - Competitive Neutrality Between Road and Rail, 1999; PJPL analysis

The problem with any reform program, however, is that the North South coastal track will naturally bottleneck at around 30-40% modal share by 2010. This is illustrated in Exhibit 32.

Exhibit 32

COSTS OF INCREASED CAPACITY AND FORECAST RAIL SHARE WITH EXISTING TRACK

North South track additional capital costs



Key drivers of the capacity bottleneck

- Sydney commuter bottleneck will get worse not better – a 'ring track' may not be cost effective
- Capital to get to sustained maximum train speeds is too high with current track routing
- Double stacking is very expensive on the current track
  – prevents 20-50% productivity increase

An inland rail track cannot be built without addressing the implicit subsidy in road access charges
- **either increase the truck access charges or Governments need to subsidise some of the investment cost**

Source: Bureau of Transport and Regional Economics, Information sheet 22: Freight between Australian Capital Cities 1972-2001; Booz Allen & Hamilton/ARTC, Interstate Rail Network Audit, 2001; Auslink; PJPL analysis

The Commonwealth's Auslink program may help achieve the capacity for rail to move to a 30% modal share on the North South corridor but there will still be inefficiencies. To increase rail's share significantly requires an inland rail route that will take many years to build, and significant changes in Government policy to bring it about.

The time seems right for policy change

Overall, the time now seems right for significant land transport reform. The various pre-conditions seem to be in place.

A well structured and co-ordinated process of change is required. Piecemeal change will not work. The required changes in one area will often depend on changes in other areas.

The key point, perhaps, is that Governments must acknowledge their role. Not only do they control the policy levers, but they have assumed for themselves a large role as industry owners of track (through, say, the ARTC) and in rail operation (through, say, Queensland Rail).

The Commonwealth's involvement in particular is significant. While it is the level of Government best able to deal with inter-capital issues, it has for a long time not engaged on rail reform issues. The recent Auslink Green and White papers may have changed this.

The Auslink reform process, however, focuses only on some aspects of the problem. It does not embrace the entire agenda.

From all of the points made in this Chapter it can be seen that there is an exciting land transport reform agenda if we wish to embrace it. It covers the need for cost reflective user charges for heavy road vehicles, the introduction of mass distance charging, factoring externalities into pricing and therefore investment, aligning the framework for access regimes and providing certainty of access fee levels to above rail operators.

Perhaps the final word on inter-capital land transport, however, should be left to the Auslink Green and White papers issued by the Commonwealth.

> *"Relying on the status quo to address these challenges is clearly not in Australia's interest. There is no 'do-nothing' option. Incremental change is also inadequate. Without major change to the planning framework, the costs of providing an effective national land transport network will be far higher. The economic and social importance of the national land transport network reinforces the need for Australia to undertake major reform."*

> *"Australia cannot afford poor and uncoordinated infrastructure decisions that impose high costs on the community, the economy and the environment … The existing planning and decision-making framework is short-term, ad hoc and fragmented across transport modes and jurisdictional boundaries. The development and implementation of a national vision for critical land transport links is vital."*

3.5 A footnote on Dalrymple Bay

The Commonwealth Treasurer and the Reserve Bank of Australia have recently highlighted a perceived lack of investment at the Dalrymple Bay Coal Terminal. In its most recent Statement on Monetary policy the RBA commented on export trends:

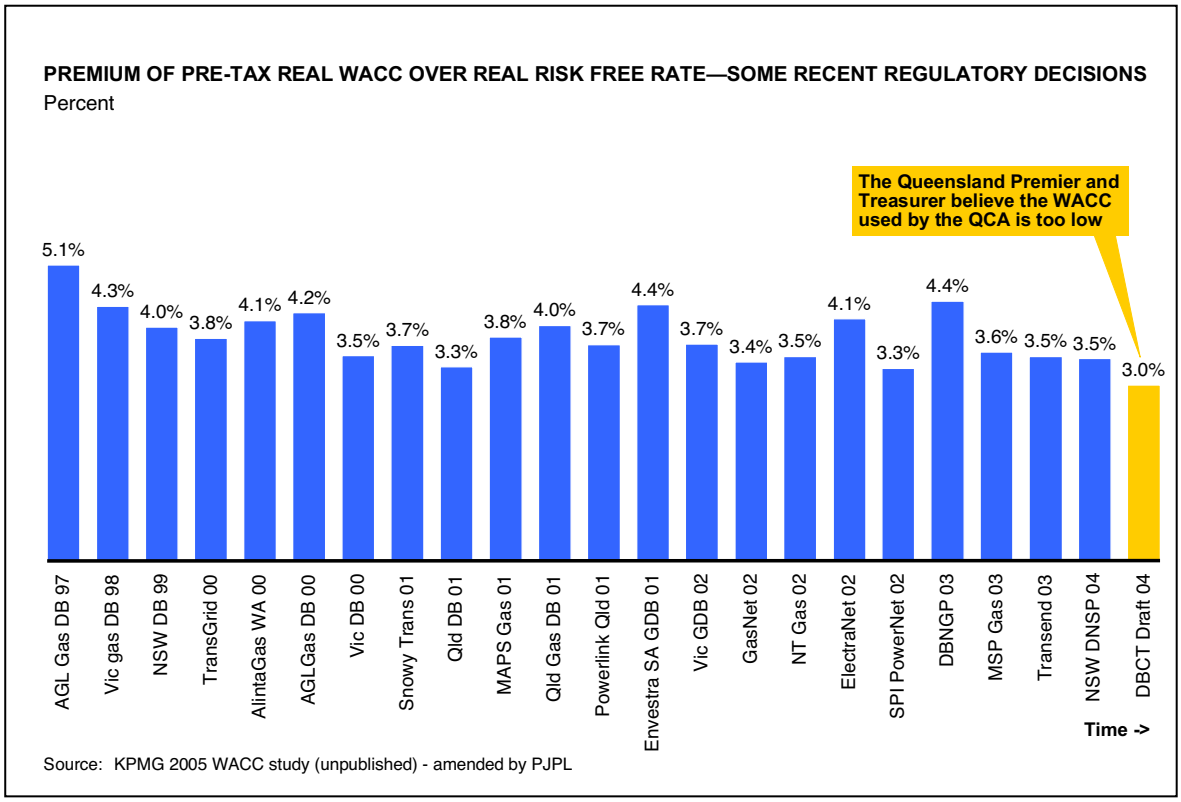
- "Over the past year, concerns have emerged that a lack of capacity in transport infrastructure is constraining the ability of the resources sector to expand export supply"
- "In the case of Dalrymple Bay, a major long-term expansion of capacity is uncertain given that … investment in new capacity is contingent on an increase in the allowable user charges, whereas the QCA has proposed that they be lowered."

This issue has become the current focus of discussion for Australia's infrastructure problems. While coal terminals were not a focus of this study a comment can be made.

The issue is that while the QCA allowed the required investment in the building blocks revenue calculation, in the view of the relevant private sector owner

and investor it allowed too low a rate of return for the investment to be justified. Some perspective is provided in Exhibit 33.

Exhibit 33



The QCA allowed a post-tax nominal rate of return of 8.2% which makes very little allowance for any risk that the business might be exposed to (such as the demand for its services falling away). Further, if the company's true weighed average cost of capital (WACC) is indeed 8.2% then it has no incentive to invest as there is no value creation in the form of a return above its WACC.

Even the Queensland Premier and Treasurer have felt forced to write to the QCA stating that they believe the allowed asset beta was too low.

They stated that "The Government is … concerned the … approach to estimating the asset beta may be susceptible to statistical error." They went on to outline a minimum asset beta, the effect of which would raise the WACC from 8.2% to around 9.0%.

The issue of the appropriate WACC to use in regulatory determinations is, of course, a wider issue than Dalrymple Bay. It is also complicated. Too low a WACC can deter investment. Too high a WACC on all regulated investments will unnecessarily raise the cost structure faced by Australian companies and consumers.

CHAPTER 4

REDUCING URBAN CONGESTION

CHAPTER 4

Reducing urban congestion

4.1 Highlighting the problem

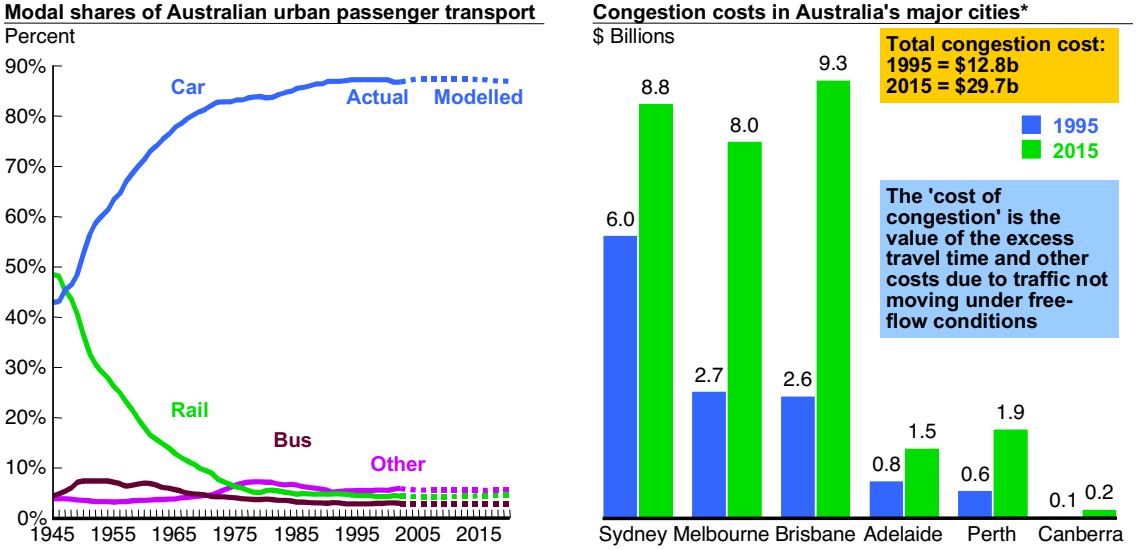
Everyone who lives in a city is aware of increasing urban road congestion. We all experience the longer journeys to get to work and to appointments.

This anecdotal view is borne out by the statistics. These indicate that urban road congestion already costs us about 2% of GDP (or $16 billion annually) and is forecast to increase significantly. This is a cost to the entire Australian economy and to our lifestyles.

Travel in urban areas is now dominated by the car and this will continue into the future. Exhibit 34 shows that while rail in the past accounted for almost 50% of urban passenger journeys this has now reduced to around 4% and this trend is not forecast to reverse in any significant way.

Exhibit 34

RISING CONGESTION COSTS IN AUSTRALIA'S MAJOR CITIES



* Cost of congestion is the estimated value of the excess travel time and other resource costs (such as extra fuel use) incurred by the actual traffic over those that would have been incurred had that traffic volume operated under completely free-flow conditions

Source: BTRE, Information Sheet 14: Urban transport - Looking ahead (1999); Update to Information Sheet 14 (2003); Information sheet 16: Urban congestion–the implications for greenhouse gas emissions

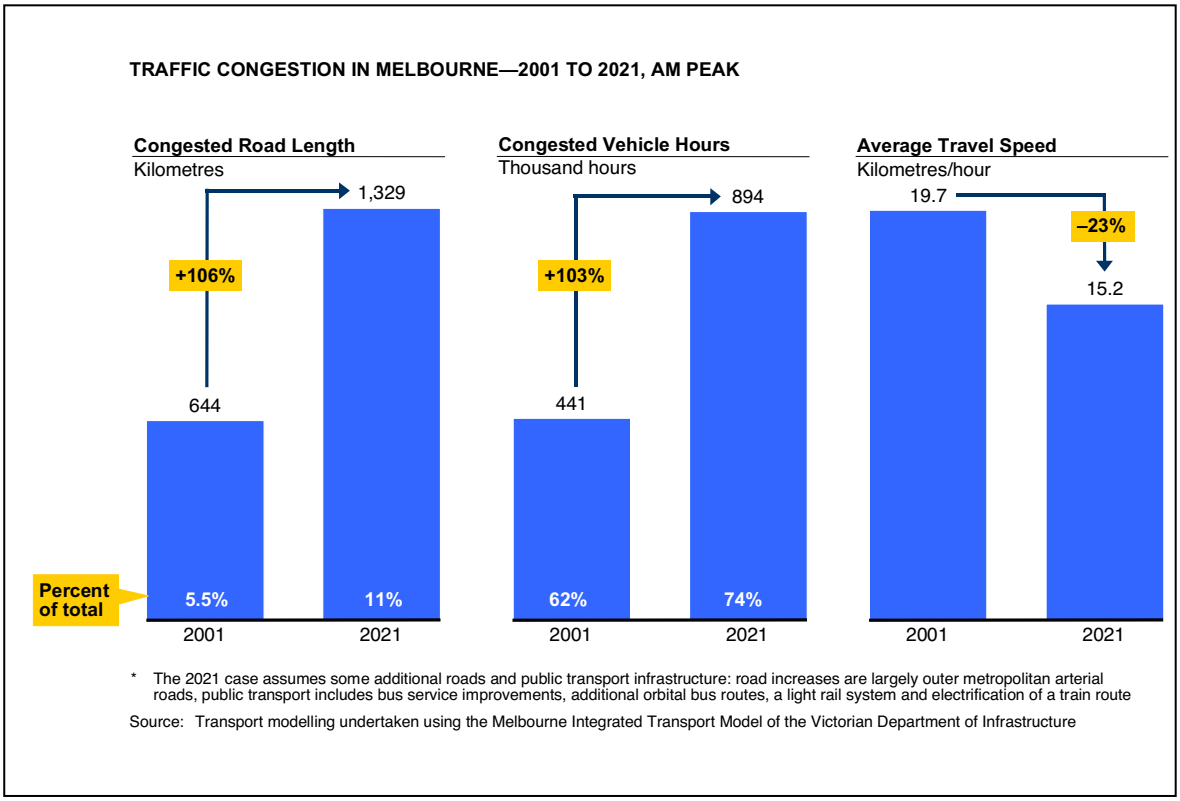
With rising urban populations and necessarily static central business districts congestion is forecast to more than double over the period 1995 to 2015. This is also shown in Exhibit 34. While we are already halfway through this period this data appears to be the latest available from a nationwide point of view. The 'cost of congestion' is the value of the excess travel time and other resource costs such as the extra fuel incurred above that which would have been incurred under free-flow (at the authorised speed limit) conditions.

To illustrate the problem more clearly we have examined traffic congestion in Melbourne in a more detailed way, as the only up to date information is available on a city basis. The Victorian Government has recently published statistics on the expected increasing congestion in Melbourne. The Victorian Department of Infrastructure was also very responsive to requests from the Business Council of Australia for information and was willing to share the results from their Melbourne Integrated Transport Model (MITM).

The MITM consists of road travel demand estimates prepared by subdividing Melbourne into 1,018 transport zones, 11,000 'nodes' or intersections and 30,000 'links' representative of all freeways, arterials and the majority of collector roads. It derives the travel produced and attracted to each zone on the basis of population and employment, in conjunction with estimates of the future road network. By 2021 the model assumes more outer metropolitan arterial roads (such as the Mitcham Frankston Freeway, the Deer Park Bypass and the Pakenham Bypass) some bus service improvements, additional orbital bus routes, an extension a light rail system and electrification of a train route.

From 2001 to 2021 congestion in Melbourne is forecast to double. This can be seen from Exhibit 35 which shows the expected increase in congested road length and vehicle hours. The congested road length not only doubles in terms of kilometres, but also as a percentage of total roads from 5.5% to 11%. Perhaps even more telling, the average travel speed across all of Melbourne is forecast to fall from 19.7 km/hour to 15.2 km/hour or by 23%. This is an extremely poor outlook for our urban amenity.

Exhibit 35



While the use of the car is a trend that will not be reversed in any significant way in our cities the situation is not helped by some inefficient and unreliable public transport. As an example, in recent years Sydney's commuter rail system, CityRail, has suffered on all three key indicators of performance which are reliability, safety and cleanliness. On-time performance, for example, has fallen from over 90% to just over 60% over recent years. While this is due to some particular issues (mainly the response to the recent Waterfall tragedy) the CityRail system is configured in such a way that until major investment occurs poor reliability will continue to encourage people to prefer using their cars.

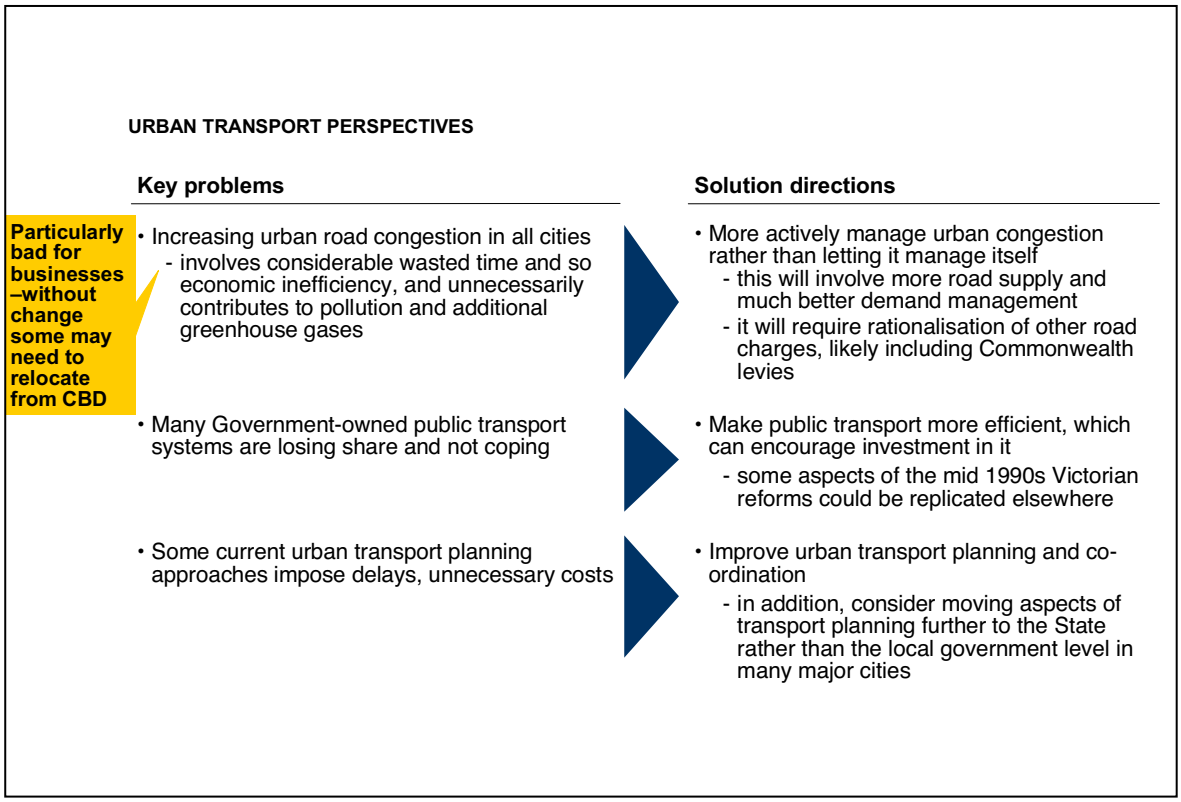
The rising urban congestion is one reason that some people call for both reduced population and economic growth. The argument is that we simply do not have the space and that a higher population in particular will reduce the living standards of us all.

In our view this argument is not correct. While it is acknowledged that the central business district in any city is finite in that we cannot duplicate, say, Bourke Street in Melbourne, or George Street in Sydney, there are many things we can do to relieve congestion. In particular (see Exhibit 36).

- We need to manage congestion more actively rather than let it manage itself. This will involve more road supply and much better demand management
- Public transport can be made much more efficient and reliable which will encourage not only greater use but also more investment in it

- There is considerable scope to improve transport planning and co-ordination.

Exhibit 36



Whether it be through adjusting Commonwealth fuel levies or industrial relations legislation there is a strong role for both the Commonwealth and the States in these issues. This is also true because of the wider economic effects of urban congestion.

We shall now explore each of these points further, particularly the need to manage congestion.

4.2 The need to manage congestion rather than let it manage itself

Governments have a continuing responsibility to invest more in roads. The new Citylink in Melbourne and the Eastern Distributor and other recently constructed and planned highways in Sydney (such as the cross city tunnel) have allowed these cities to prevent congestion levels from rising in recent years as fast as they otherwise would have. Brisbane is now contemplating similar investments.

Some of the recent projects have also allowed journeys that in the past would meet traffic lights every kilometre or less to be undertaken traffic light free. For example, people can now drive from the centre of Sydney on their way to Canberra

and Melbourne without encountering a traffic light. A similar change has occurred in Melbourne.

Not only do other cites such as Brisbane need such expenditure but more is also needed in Sydney and Melbourne. Governments have a responsibility to ensure that the road supply grows with demand.

Governments also, however, need to consider how to manage the demand side. While much more can be done on the supply side, the demand side has been left largely untouched.

Toll roads are an excellent way to fund roads. One benefit is that the users pay rather than the general taxpayer. Another is that private companies take on the construction and maintenance risks so that the public is no longer exposed to the large cost overruns seen in the past.

Toll roads are not, however, a tool for demand management. People pay irrespective of time of use and toll fees depend on road ownership not congestion.

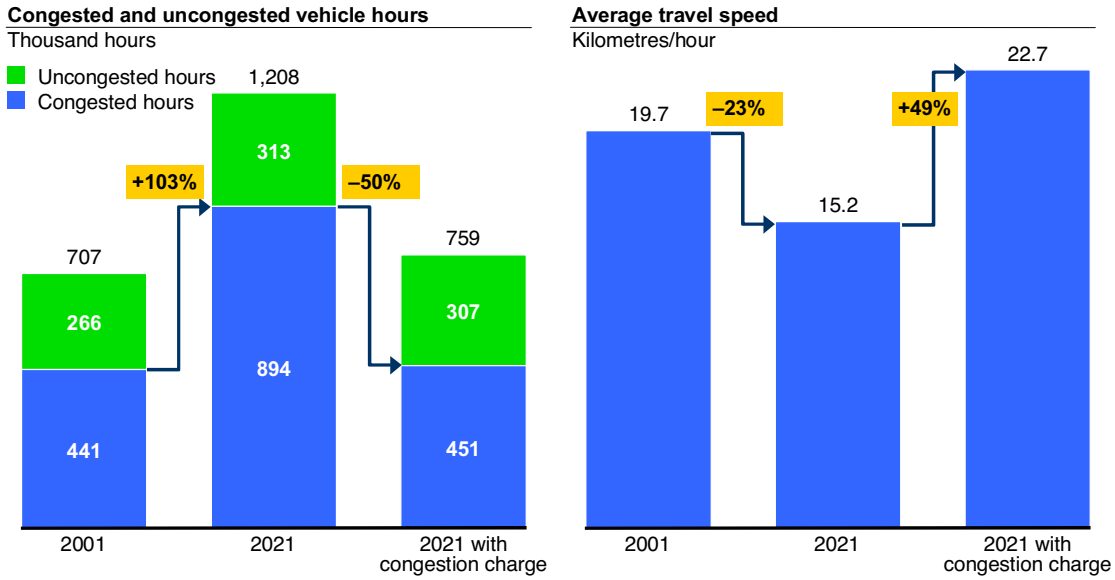
To illustrate the way improved supply and demand management can help address congestion the BCA asked the Victorian Department of Infrastructure if it would allow additional runs of their MITM model, and they were kind enough to agree.

A case study: easing Melbourne's traffic congestion

If a congestion charge is imposed on the Melbourne CBD then the congested vehicle hours return to more acceptable levels, while average travel speed actually increases to higher than the 2001 levels. This is shown in Exhibit 37. To provide a simple, easy to model congestion charge we used the Department of Infrastructure model to examine the impact of doubling the cost of parking in the CBD (which amounts to a congestion charge of about $10 on average). Many more sophisticated mechanisms are available which we will discuss below.

Exhibit 37

IMPACT OF A CONGESTION CHARGE* IN MELBOURNE, AM PEAK



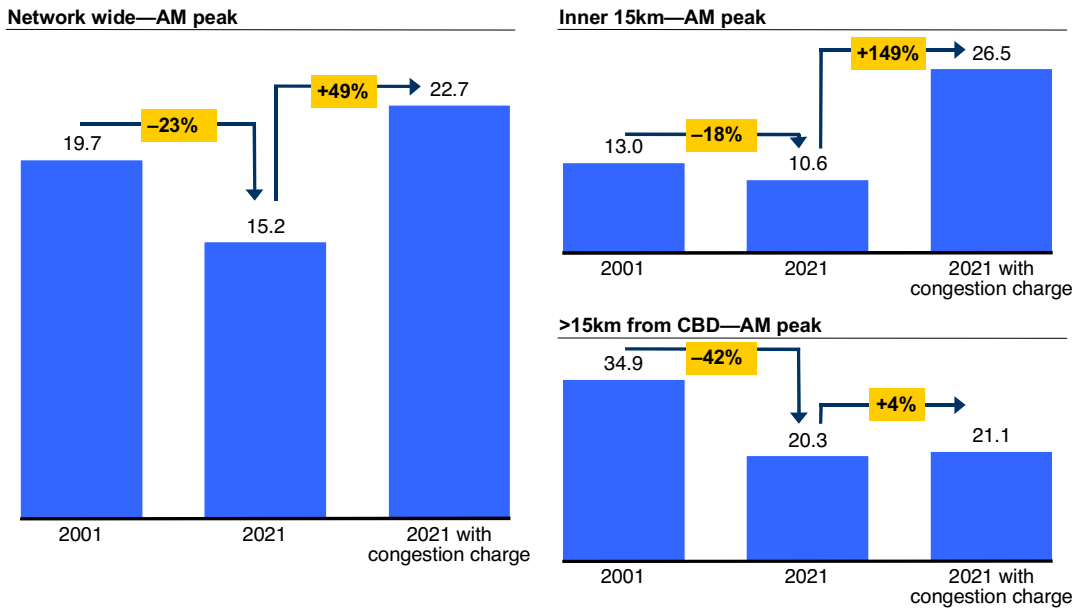
* As a proxy for a congestion charge a parking levy was modelled such that the existing cost of parking in the CBD doubles

Source: Transport modelling undertaken using the Melbourne Integrated Transport Model of the Victorian Department of Infrastructure

One interesting, but not very surprising result from this example was the very different results in the inner versus the outer metropolitan area. These are shown in Exhibit 38. In the inner metropolitan area (the inner 15 kilometres) the average travel speed increases significantly with the introduction of an inner city parking charge. In the outer metropolitan area the modelled congestion charge in the CBD had little effect.

Exhibit 38

AVERAGE TRAVEL SPEED IN MELBOURNE, AM—2001 TO 2021—INNER VERSUS OUTER METRO AREA
Kilometres per hour



Source: Transport modelling undertaken using the Melbourne Integrated Transport Model of the Victorian Department of Infrastructure

The point is that a mix of measures is needed to influence congestion. In the outer metropolitan areas there will be benefit from additional roads and public transport, and also from congestion charges that affect traffic flows in these areas.

In the inner metropolitan area, where space is hard to find for additional roads and even public transport (although tunnels can be used), congestion charges must be an important part of the traffic management mix. Not to utilise them is to condemn inner city areas to eventual gridlock at certain times.

We are not advocating any particular type or level of congestion charge, but simply the concept of demand management. While no-one wants to pay a congestion charge, each individual's stance will depend on how they value their time otherwise lost in traffic congestion.

The more important point is that the burden of any congestion charge can be accompanied by the rationalisation of other taxes on motorists. There is no reason why the imposition of congestion charges should be seen as an opportunity to increase the overall level of taxation. This should be about demand management, not revenue.

There are many different congestion charging mechanisms. These are illustrated in Exhibit 39 along with some of their important characteristics.

Exhibit 39

DIRECT ROAD PRICING OPTIONS

Type of system	Description	Equipment costs	Operating costs	User inconvenience	Price adjustability
Pass	Pass purchased to enter cordoned area	Low	Low	Medium	Poor to medium
Toll booths	Motorists stop and pay at a booth	High	High	High	High
Electronic tolling	Electronic system bills as user passes point in the road	High	Medium	Low	High
Optical vehicle recognition	Optical system bills as user passes point in the road	High	Medium	Low	High
GPS	Tracks vehicle location, with data automatically transmitted to central computer that bills user	High	Medium	Low	High

Source: Towards a fairer fuel tax policy–Australian Automobile Association submission to the Fuel Tax Enquiry, October 2001

A well known and apparently successful example of a congestion charge is the one imposed in London in 2003. Users pay £5 for the right to enter central London between 7.00am and 6.30pm on weekdays, but they can then leave and re-enter the cordon multiple times. Compliance is monitored with number plate recognition systems at the cordon entry points.

The impact of the London charge has been dramatic[3] . Traffic has fallen 15% within the cordon, and congestion has fallen by 30%. In addition, public transport use has risen by over 30% and bus reliability has improved. This also reflects the fact that the proceeds from the cordon charge were used to improve public transport and lower fares.

Similar schemes to that of London are under consideration in many European cities and some in the USA.

4.3 Improving the productivity of public transport

There is considerable scope to improve the productivity of public transport. This would both improve its usage, and allow more investment in it.

[3] See Transport for London website: http://www.tfl.gov.uk/tfl/

The recent Ministerial inquiry into sustainable transport in NSW, December 2003, for example, indicated the scope for improvement very clearly.

> *"(CityRail) must also achieve significant cost reductions by increasing the efficiency of its operations. This will require management and workplace practices and culture to be radically overhauled. ... there is an overwhelming sense that CityRail does not promote a real commitment to quality, customer focus and a service culture."*

The Inquiry then cites examples of the need to centralise signal operations, improve the purchasing process for new rolling stock, change the location and practices of rail maintenance staff and make changes to train driver schedules.

There are many changes that need to be made to long-standing practices. For example, train drivers in Sydney are limited in their Award by the distance they can drive each day. Whatever the logic these limits may have had, with today's technology these limits now mean that train drivers can only drive approximately 4-5 hours a day on average.

The above-mentioned Inquiry also states that "… there may be further potential to save costs by better managing staff hours and conditions." It quotes an example where the cashiers employed by Sydney Ferries receive nearly $60,000 per year and that "… this compares to base wages for similarly skilled tasks of between $26,000 and $27,000 for supermarket assistants or movie ticket cashiers."

The Inquiry also compares the cost structure of the publicly owned Sydney Buses with that of private operators. It found that Sydney Buses had a bus hourly cost nearly 50% higher and a bus overhead cost of two-thirds higher. It then stated that "… An important component of Sydney Buses' higher costs are the significantly higher rates of overtime and allowances it pays its staff. These rates are determined by award conditions."

This is further illustrated by contrasting the above with some of the reforms in Victoria in the mid 1990s. Exhibit 40 does this at a high level and also shows the declining levels of cost recovery for CityRail in Sydney.

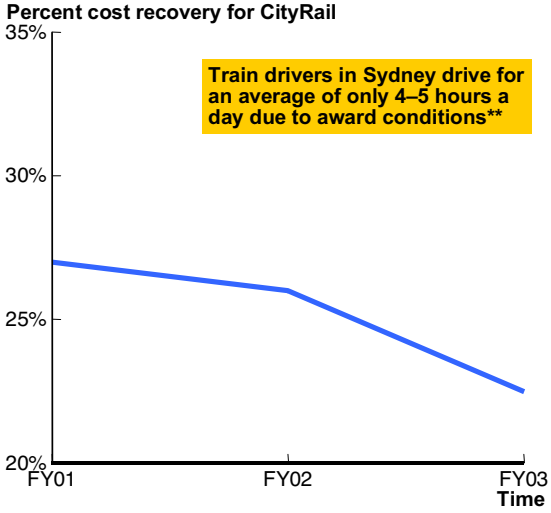
There is clearly a strong link between the efficiency of public transport and a practical industrial relations reform agenda.

Exhibit 40

IMPROVING EFFICIENCY

On the one hand (NSW)* ...

Percent cost recovery for CityRail



... on the other (Victoria)

- The Kennett reforms of the mid–1990s: ***
  - Reduced recurrent costs by $643 million with continuing savings of at least $245 million
  - Removed over-resourcing, inefficient practices and rationalised workshops
  - Punctuality of all scheduled transport services rose during the period

* Ministerial inquiry into sustainable transport in New South Wales (Parry Report), December 2003
** Discussions with transport experts
*** Victorian Auditor-General's Office, May 1998

4.4 The need to improve transport planning and co-ordination

There is wide acknowledgement in discussions with transport officials and experts of the need to improve transport planning and co-ordination. As one expert said to us:

> *"Urban planners usually do not like cars yet they do not control public transport planning … we get poorly served communities by all transport modes*."

The result is populations without adequate transport infrastructure.

The above-mentioned Ministerial Inquiry in NSW presented a similar view.

> *"The past lack of integration between road infrastructure planning and public transport planning and the failure to apply robust investment rules to both road and other transport infrastructure represent a significant and costly shortcoming… We have:*
>
> - *A metropolitan rail system that is so 'tangled' that it is unable to cope with necessary system changes, let alone service expansion*
> - *A Government-operated bus system that is providing some services that are not obviously needed."*

Nor is Victoria much better off. In discussion with urban transport experts we learnt that the dispersed level of planning approvals creates many problems. For example:

- *"To change public transport routes 5-6 Councils needed to agree*
  - *but in gaining this agreement costs can more than double*
- *Nine Councils had to agree to get parked cars off the roads to provide a clear and reliable public transport route – it was too hard, so they gave up."*

4.5 Concluding Comments

Some can point to high levels of urban congestion and see a reason not to pursue higher economic or population growth. This is a very short term and wrong view.

Our examination sees many solutions to the problem and a need for concerted action by all levels of Government to address it. We would argue that urban congestion can be improved with sensible investment, attempts at demand management, improved productivity and reliability of public transport and much better and co-ordinated planning. Such an agenda can also contribute significantly to improved productivity and therefore the higher growth and living standards we all seek.

CHAPTER 5

ENSURING THE BEST USE OF OUR RURAL WATER SUPPLIES

CHAPTER 5

Ensuring the best use of our rural water supplies

5.1 Highlighting the problem

Our rural water supplies are extremely important for our economy and for our rural amenity. They are a vital national asset.

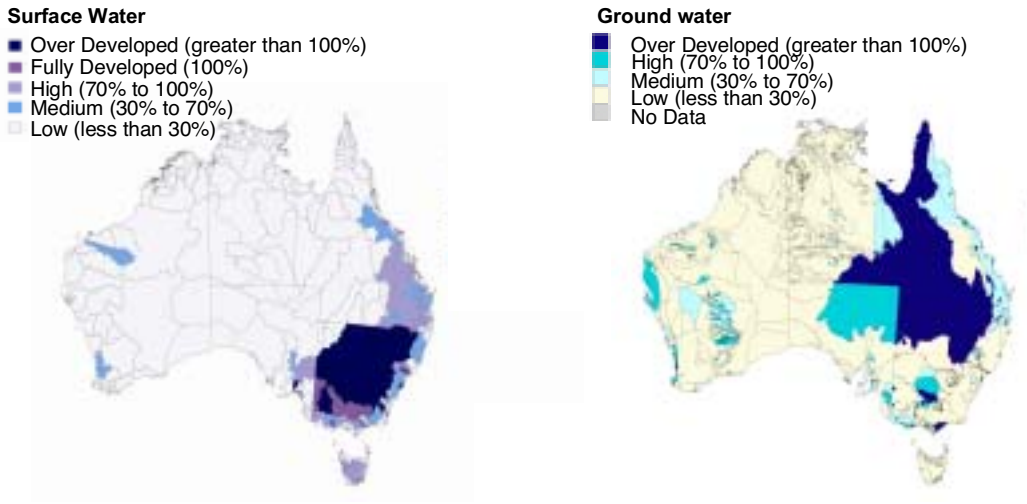
Australia's surface and groundwater systems are, however, under considerable stress. This is particularly the case in areas of high agricultural production.

Of 325 surface water basins 84 are close to or over used based on year 2000 data. Most of these are in the eastern states, with the Murray Darling Basin the main problem area, as shown in Exhibit 41.

Exhibit 41

SURFACE AND GROUNDWATER WATER DEVELOPMENT STATUS—2000

Percentage of sustainable flow diverted, or of sustainable yield used



Source: National Land and Water Resources Audit, http://audit.ea.gov.au/ANRA/

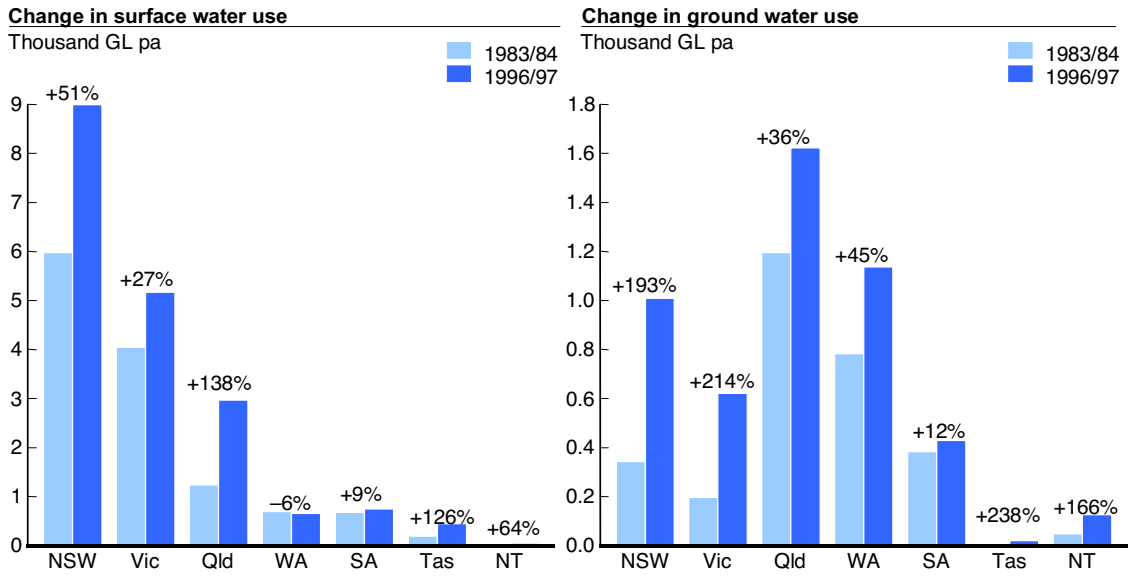
Of 538 groundwater management units, 168 are close to or over allocated, also based on year 2000 data. The most affected areas are inland Queensland, the Murray Darling Basin and the south west of Western Australia.

This over allocation causes major problems. Not only does it reduce the reliability of water supply to users, but it causes poor water quality (i.e. salinity) and unhealthy rivers (for example, through blue-green algae that can be harmful to people and livestock). Both agriculture and recreational amenity suffer.

It seems that these problems may have been exacerbated by substantial increases in water use in recent years. This is illustrated in Exhibit 42 which shows a considerable increase in surface water use in Queensland over the last 20 years, and very large increases in ground water use in NSW and Victoria over the same period.

Exhibit 42

CHANGE IN WATER USE



Source: Australian Natural Resources Atlas, Water Resources–Allocation and use, http://audit.ea.gov.au/ANRA

There is a common perception that the over allocation of water and resulting surface and groundwater stress provide evidence as to why Australia cannot afford a higher population or higher economic growth. This is a false perception. The problem lies with inappropriate public policy, not with high population or economic growth.

Rather than hold back population or economic growth Australia needs to allow permanent trading in water property rights. This can provide win/win solutions as 'lower value' users can trade out and, indeed, it can itself facilitate further economic growth.

An additional requirement is, where appropriate, to buy back allocations to restore healthy river flows.

The rest of this chapter:

- Makes the case for full water trading
- Summarises the essential requirements to allow effective trading
- Comments on the recent National Water Initiative and the way forward.

Before returning to these topics, however, it is important to understand some key facts in relation to the Murray Darling Basin.

5.2 Some key facts in relation to the Murray Darling Basin

The Murray Darling Basin is the largest agricultural area in Australia. It accounts for $9 billion per annum in agricultural production and provides a source of water that is shared by four eastern states and the ACT. This is shown in Exhibit 43.

Exhibit 43

MURRAY DARLING BASIN

Key facts about the Murray Darling Basin

- The Murray Darling Basin extends over three quarters of NSW, more than half of Victoria, the whole ACT and significant proportions of Queensland and South Australia
- Around 70% of all agricultural water used in Australia is used for irrigation in the basin
- Water from the Murray Darling Basin is used by all four states, with water from areas such as Goondiwindi on the MacIntryre River in South East Queensland flowing through to the Murray River mouth near Adelaide

Source: Murray Darling Basin Commission; Department of Agriculture, Fisheries and Forestry

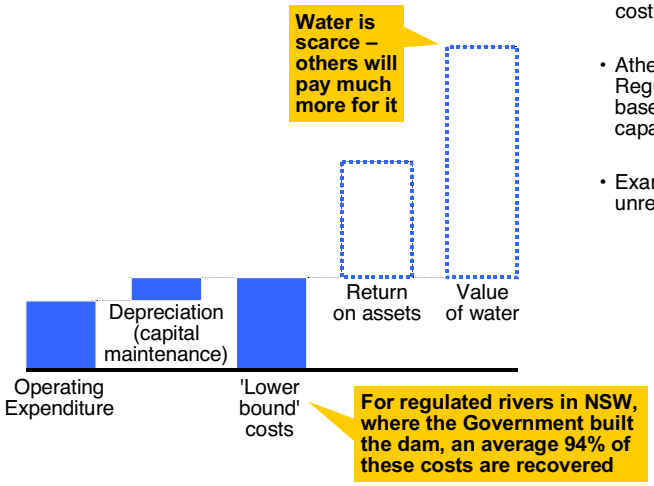
The key fact to understand is that water from such areas as Goondiwindi in South East Queensland flows through to the Murray River mouth near Adelaide. That is, there are many alternative geographical locations where the water can be used. Water that is allowed to flow through one area can often be used in another.

It is also important to understand that while the same water can be used in different places, it is priced in very different ways. Exhibit 44 illustrates this.

Exhibit 44

EXAMPLES OF RURAL WATER PRICING

Approach to rural water pricing	Specific examples	Pricing
	• MacIntyre Brook Regulated River price covering full 'Lower Bound' costs	• ~$35/ML pa
	• Atherton Tableland Regulated River price, based on farmer capacity to pay	• ~ $20/ML pa
	• Example Queensland unregulated River price	• ~$3/ML pa



Source: Discussions with irrigators; Transcript of conversation between Queensland Natural Resources Minister Stephen Robertson and Asa Wahlquist of The Australian; NCC Assessment of governments' progress in implementing the National Competition Policy and related reforms: 2004

In rural areas water is usually priced to recover so called 'lower bound' costs, that is, the cost of operating expenditure and capital maintenance. In part it is this objective which causes the price disparity.

In many areas the full 'lower bound' costs are recovered. One such example is in the MacIntyre Brook Irrigation Area where water prices are typically $35/ML (megalitre) per annum. In the Atherton Tableland, however, where it is judged that the capacity of farmers to pay is less, the price can be $20/ML pa.

Where water is obtained from landowners' dams, rather than Government dams, the prices can be much less. For example, some agricultural stations built their own dams, and have the right to take large quantities of water (in one case approximately one-fifth of Sydney's annual consumption every year). Since the Government did not build the dam, and does not need to maintain it, the costs the Government needs to recover are negligible, as shown in Exhibit 44.

The issue is that just as with urban water, the water itself is priced as if it were freely available. It is effectively priced at zero, even though it is in scarce supply. Returning to the MacIntyre Brook example in Exhibit 44, while the 'lower bound' price of the water is $35/ML pa, the imputed value of the water as seen in combined land/water sales (there is no permanent water trading) can be between $1,500 - $2,200 per ML. On an annualised basis this would see a water scarcity premium of, say, an additional $100/ML pa.

The point, however, is **not** necessarily to price the water to reflect the scarcity of water. You would do this mainly to provide a return to Government on their past investments. This may threaten the livelihood of farmers who have purchased and worked the land in good faith, and it is not necessary to achieve sound water allocation.

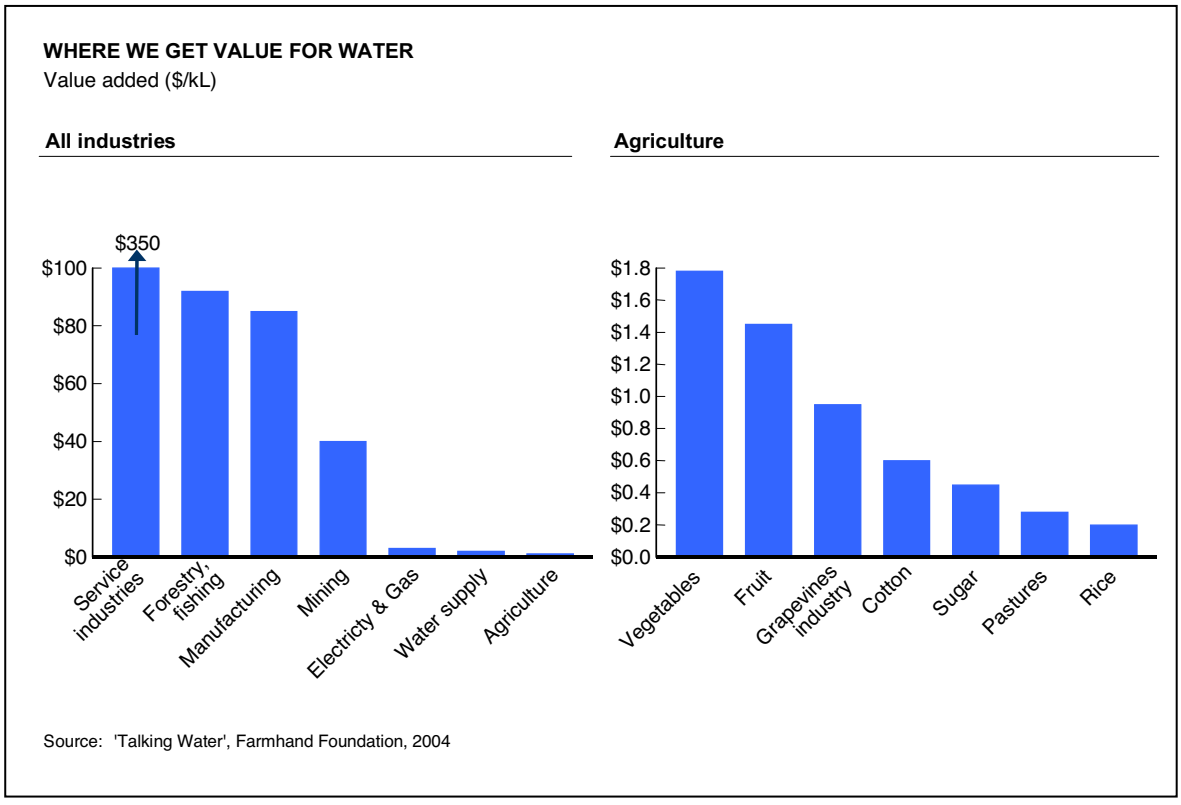
The point instead is to allow full and permanent water trading so that the water flows to the best use, and so people can trade out in win/win ways.

5.3 The case for permanent water trading

There are a number of arguments in favour of permanent water trading.

First, it allows the water to be put to the best economic use, that is, the market determines the best use for this scarce commodity. Potential users will sometimes pay much more for water than current incumbent users who are using it for low value purposes. It is important to remind ourselves that the value created from different uses of water varies widely. This can be seen from Exhibit 45. It is, of course, obvious that the value added per thousand litres ($/kL) will be very high in the service sector, and lowest in agriculture. Water is a major input to agriculture, but not to the service sector.

Exhibit 45



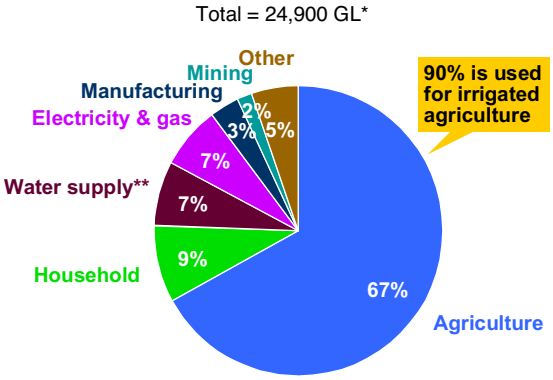
Not so obvious is that 12% of our irrigation water produces 50% of our agricultural value. This is shown in Exhibit 46. This does **not** mean we should exit

the low value added sectors. Much depends, for example, on the alternative use of the water being used. Each amount of water will have its own price depending on its location and quality.

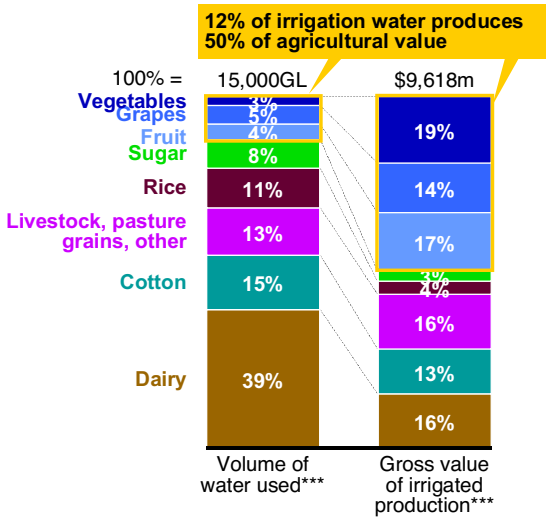
Exhibit 46

WATER USE IN AUSTRALIA—2000/01

All water by end use



Water use by agricultural industry



* Includes mains water, self extracted water (river and groundwater) and re-use water, excludes direct rainfall unless captured for later use
** Includes losses from seepage and evapotranspiration as well as water used by the Water supply, sewerage and drainage services industry
*** The volumes of irrigated water come from 1996/97 data, the gross value of irrigated production from 2000/01 data. The exact proportions may have changed between the two time periods, but it seems clear from other sources that a small proportion of water produces a large proportion of the value
Source: ABS Water Account Australia 2000-01, 4610.0; Natural Heritage Trust, Australia's Natural Resources 1997-2002 and Beyond

What it does mean is that we should let the market decide how our water is used. If there are currently many high value users unable to obtain water then permanent water trading should boost Australia's production potential even after allowing for environmental flows.

The second benefit is that water trading provides a win/win outcome. There is no need to increase water prices to be sure water is put to the highest value use, or is not wasted. Water trading can put a value on the water in a way where everyone benefits.

The third benefit is that with the true value of water being visible, there should be a large incentive to reduce wastage. This is a very important issue.

It has been estimated that over one third of Australia's irrigation water is lost through wastage. Indeed, there is significant waste both before the water gets to the farm gate, and on the farm. Some examples and likely solutions are provided in Exhibit 47. We have wastage from irrigation channel seepage and evaporation, from uncapped bores and from irrigation practices.

Exhibit 47

EXAMPLES OF WATER USE INEFFICIENCY

"Over one-third of irrigation water goes lost or unaccounted for before it reaches the farm gate"*

Example	Problem	Suggestion
Metering and measurement inaccuracies	• Inaccuracies in, or lack of, measurement of river flows and irrigation usage results in poor management of flows and unaccounted for water losses	• The Pratt Water Murrumbidgee Project estimates $150m investment is required in improved river monitoring and metering systems on farms in that area
Inefficient irrigation practices	• Many irrigators use water much less efficiently than best practice	• For example, efficiency can be increased from 60% to 90% by switching from surface to trickle irrigation
Uncapped bores	• ~900 uncapped bores in the Great Artesian Basin (Qld, NSW, SA)	• Invest an estimated $286m in capping bores to control flow rates, and lining bore drains to reduce seepage and overflows
Irrigation channel evaporation, seepage and leakage	• Over 70,000km of open water conduits result in losses of 30%-50% of all water supplied	• Line channels with concrete or plastic to reduce seepage and leakage
Storage evaporation	• Dams and storages on or near farms are often very shallow with large surface areas leading to high rates of evaporation	• The Pratt Water Murrumbidgee Project has identified 20-30GL per year of water savings in the Murrumbidgee Irrigation Limited area through capital works at Barren Box Swamp at a cost of $30m, or ~$50/ML over 20 years

* Truth in water entitlements, p5

Source: 'Talking Water', Farmhand Foundation 2004; Truth in Water Entitlements, Farmhand Foundation 2004; The Business of Saving Water, Pratt Water Murrumbidgee Project, 2004

The fourth benefit of permanent trades is that they can replace many sub-optimal temporary trades. There are many areas where temporary trades can amount to a significant proportion of water use. While temporary trading is much superior to no trading, the problem is that the yearly buyer has no certainty of use as a basis for investment in, for example, alternative crops or better irrigation equipment.

Finally, irrigation farmers currently have difficulty raising bank finance because the value of the water must be imputed from combined land/water sales. In addition, any lack of water flow certainty complicates the valuation.

When water entitlements are well defined and secure the property right is more bankable. These secure property rights are probably necessary for the next wave of investment into irrigated agriculture. Some experts argue that billions of dollars of investment and the future of some rural communities will depend on this investment occurring.

The market for traded water is currently very underdeveloped. Exhibit 48 provides a brief summary of the recent level of permanent water trading in the East Coast states. Of course, averages can be misleading and in some areas considerable trading has occurred.

Exhibit 48

LEVEL OF PERMANENT WATER TRADING IN EASTERN STATES

State	Permanent trades 2000-01 (GL)	Percentage of agricultural water use	Indicative Traded Prices $/ML	Comment
Queensland	0.3	~0%	NA	• Nine trades were made under a pilot scheme
NSW	44.4	0.6%	$230 – $1,235	• An environment assessment is required for all transfers of over a 5 year duration
Victoria	22.4	0.6%	$600 – $1,200*	• Permanent water trading has been possible since 1991, but only an estimated 6% of total entitlements have since been traded as barriers still exist
South Australia	53.9	4.1%	$950 – $1,050	• Trading was concentrated in the Murray River area

* August 2004

Source: ABS Water Account Australia 2000-01, 4610.0; Water Markets Week, EWN publishing, 25 August 2004

Further, significant changes are required before permanent water trading is possible on a large scale. It is worth discussing, at a high level, what is required.

5.4 The requirements for permanent water trading

The key point is that water trading will only work where there is wide trust in the integrity of the reliable water entitlements. This will only be achieved with accurate modelling that takes account of the 'take point' of the water and the 'all-of-system' flows. The point is well illustrated by example in Exhibit 49. The example is taken from the MacIntyre Brook Irrigation area in South East Queensland.

Exhibit 49

WHY WATER TRADING REQUIRES CLEAR 'CURRENCY' DEFINITION

Key requirement

Need wide (ie east coast, SA-wide) trust in integrity of calculations that:

- determine the reliable allowable annual water take from each Irrigation Area
- discount for losses when water is sold out of the immediate irrigation area
- take account of 'all of system' flows, not just dam release

"Implicit in the definition of water entitlement is the necessary information that allows conversion factors ... for the end-user rights of different river valleys ... there are (currently) major differences in the legislative and specification of water rights in different States ... Extensive water trading will be difficult and fraught with unknown social and environmental impacts until a common security of title is applied to defining water at the wholesale level"**

Example problems*

- The MacIntyre Brook Irrigation Area is based on the Coolmunda Dam which was built to allocate 23,000 ML pa to a local area
  - 6,000 ML of this was sold by the Government to Goondiwindi farmers but there is, say, 30% loss to get it there through seepage and evaporation. That is, 9,000 ML must be released to allow 6,000 ML to be taken downstream. Such a release undermines the system reliability
  - for example, the Dumaresq River now has ~30% reliability compared to a previous ~80% due to water being sold outside of its area
- Assessments must be based on an 'all-of-system' basis, not dam release, e.g.
  - a recent 2,500 ML dam release hit a naturally flowing stream and took an additional 2,000 ML from the MacIntyre Brook system

* These largely come from the Darling River area, the top of the Murray-Darling Basin. They in part draw on discussions with an irrigator from the MacIntyre Brook Irrigation Area
** Truth in Water Entitlements, p15

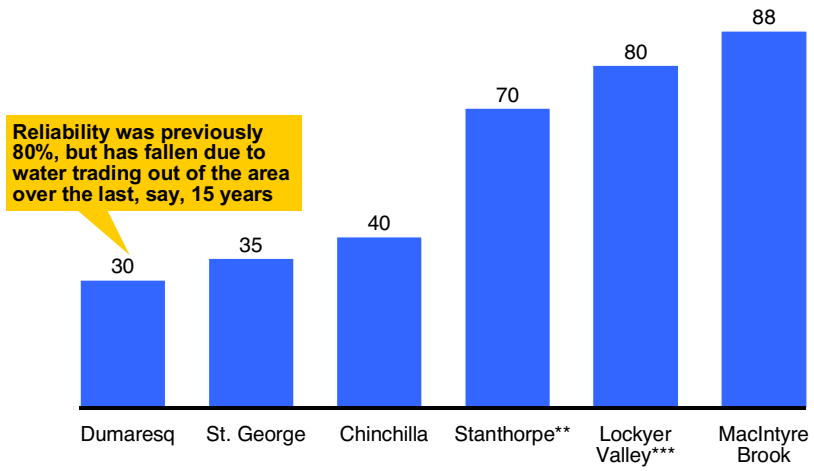
In the example it can be seen that when trading water outside an irrigation area it is vital to calculate the 'currency conversion' accurately that reflects the different 'take points' for the water. Not to do so can destroy the integrity of an irrigation scheme. Farmers are very aware of this. They will naturally oppose water trading outside the local area if this issue is not dealt with appropriately and transparently. Indeed, in defining the level of water availability, and the 'currency conversion' factors for the 'take points', it is vital that time is taken to bring communities along with the calculations and processes.

As a further illustration, the Dumaresq region used to have the same level of reliability as enjoyed by the MacIntyre Brook region. As illustrated in Exhibit 50 this is no longer the case. Local irrigators are of the view that reliability has fallen because of a lack of clear 'currency' definition for water trades out of the region. This emphasises again why this is such an important issue.

Exhibit 50

IRRIGATION AREA RELIABILITY*

Percent



* The proportion of allocated water that can actually be pumped during an average year (shortfalls arise when catchment dams not filled by annual rainfall)
** Overland flow license
*** Bore license
Source: Discussions with irrigators

There are, of course, many other requirements for effective water trading. Some of the more important ones are summarised in Exhibit 51. For permanent and effective water trading to occur all of these impediments need to be removed.

Exhibit 51

NEED FOR EFFECTIVE TRADING

Need	Current problems
Secure tenure	• Not all entitlements are currently permanent, as some are subject to Ministerial intervention
Transferable entitlements	• While entitlements are not always tied to land, they can include rights that are linked to land, making transfers problematic
Common approach across jurisdictions	• Different approaches are taken to different water sources which lead to trade and pricing distortions
'Market making' mechanisms	• Lack of information (e.g. conversion factors, trading prices) constrains trade, clear and publicly available registers of entitlements are not always available, and approval mechanisms for trades can be slow and not transparent
Appropriate infrastructure management approach	• Some components of infrastructure charges which should be linked to land are tied to water entitlements (e.g. irrigation channels), which can lead to stranded asset problems

Over recent years there appears to have been a growing acceptance of the above at least in concept. The issue is how to progress this issue in both an appropriate and timely way.

5.5 The way forward

In 1994 the Council of Australian Governments (COAG) agreed to pursue a wide range of reforms to pricing, water property rights, allocating water to the environment and facilitating water trading, among others. As the National Competition Council noted in its recent 2004 "Assessment of Governments' progress in implementing the National Competition Policy and related reforms":

> *"Because COAG 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."*

Considerable progress has indeed been made. There is now more temporary water trading occurring and there has been increased acceptance of the need for permanent water trading based on sound science.

There have, however, also been many missed deadlines and different approaches taken between States, and there are continuing significant barriers to full water trading.

In 2004 the Commonwealth and the States agreed on the National Water Initiative (NWI). This seeks to address most of the outstanding issues.

The NWI was, however, stalled after a disagreement over funding. In recent weeks most States have settled their dispute with the Commonwealth to allow some projects under the NWI to proceed.

There remain some other important concerns. First, not all States originally signed on to the NWI (Western Australia and Tasmania did not). Second, the link between the additional Commonwealth funding and a strict audit of progress is not clear. Indeed, the funding needs to be clearly tied to outcomes, such as achieving high reliability in water entitlements, rather than tied to inputs and processes.

What most experts and officials appear to agree on is that the 'devil will be in the implementation detail'. In particular:

- COAG needs to monitor progress more closely than it has in the past
- Transparent and rigorous annual technical and policy reporting is required
- States need to adopt consistent approaches and standards, and
- Timetables need to allow for sufficient time for sound science to be applied and for adequate community consultation to occur.

Until full and transparent water trading is achieved this issue needs to receive the constant attention of the heads of all governments.

CHAPTER 6

RESTORING OUR URBAN WATER SUPPLY AND DEMAND BALANCE

CHAPTER 6

Restoring our urban water supply and demand balance

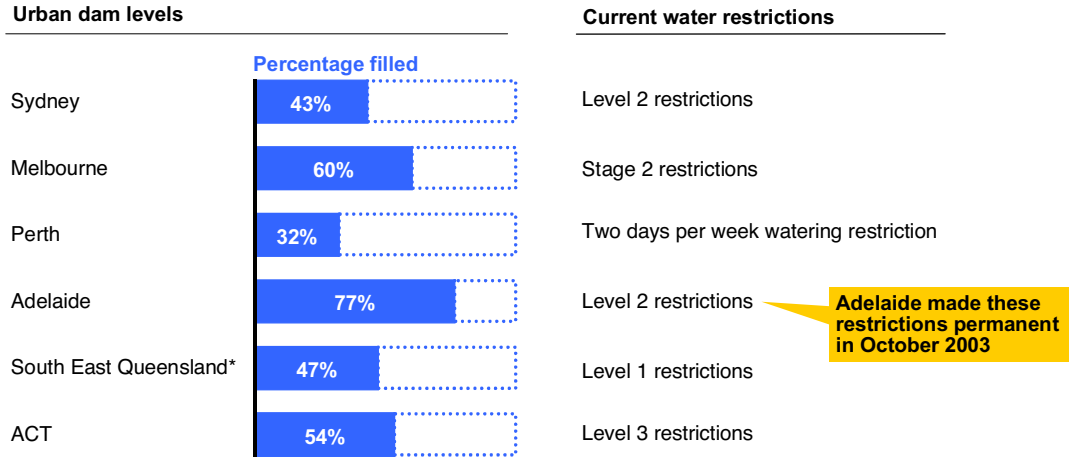
6.1 Highlighting the problem

The shortage of urban water supplies has been a prominent topic recently. While it dominated the recent Western Australian election debate, a shortage of urban water supply has been highlighted as an important issue in all of our major cities.

Dam levels are currently below the levels that water authorities would prefer in most urban areas. This can be seen in Exhibit 52. Sydney, Perth and South East Queensland are feeling particularly vulnerable.

Exhibit 52

MAJOR URBAN DAM LEVELS AND WATER USAGE RESTRICTIONS—JANUARY 2005



* South East Queensland includes Brisbane, Gold Coast and other areas in south east Queensland

Source: Water utilities' websites

In response, all of Australia's major urban centres are facing water restrictions. These restrictions affect whether and when water can be used for a range of normal domestic purposes from watering the garden through to washing the car.

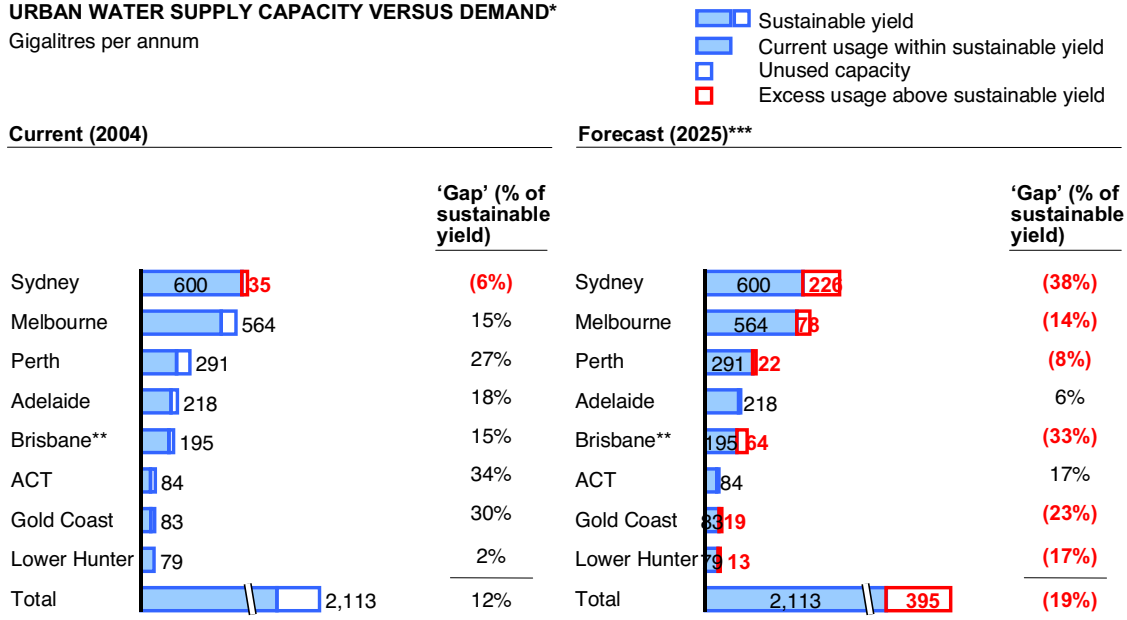
Without policy change this situation will worsen, as Australia's current urban water demand is already close to sustainable capacity, and Governments do not appear yet to be embracing sustainable solutions. Exhibit 53 shows the current usage, and

the 'spare' capacity that exists above the estimated sustainable capacity. It can be seen that Sydney's current usage is already above the long term sustainable supply. This situation has prompted the NSW Government to observe that:

> *"Sydney is using more water than is sustainable … water could be a key limiting factor on Sydney's future growth and prosperity"*
>
> - NSW Government's Metropolitan Water Plan, 2004

Exhibit 53

URBAN WATER SUPPLY CAPACITY VERSUS DEMAND*
Gigalitres per annum



* Figures include industrial water use in urban areas
** Brisbane includes only those people serviced by Brisbane Water (Brisbane City Council)
*** BCG forecasts adjusted to assume no increase in per capita consumption by 2025
Source: Water Services Association of Australia data adapted to BCA growth forecasts by the Boston Consulting Group (BCG)

Such a comment, of course, makes our urban water supply/demand balance a much bigger issue than it might first appear. The quote suggests that a State Government may wish to constrain the growth of a city to fit what it perceives as the available urban water supply.

To achieve this they might oppose a range of measures that could advance economic growth in their State, or in Australia as a whole.

The situation faced by Sydney could well be replicated more widely in future years. Exhibit 53 also provides a forecast of the extent to which water demand may be above sustainable supply levels in 2025 if Australia's population were to reach 26 million people, if per person usage stays as it is now (when we already have water restrictions in place), and if no new water supply sources are available.

While this last assumption of no new water supply sources may seem an extreme assumption, it could well reflect the broad thinking of many Governments.

When discussing their future plans for urban water demand and supply many Governments appear to put more emphasis on physical usage controls than they do on potential new sources of supply.

The NSW Government's recent Metropolitan Water Plan recognises future water availability as a critical issue for Sydney. Exhibit 54 provides a brief summary. The Plan outlines a wide range of sometimes stringent physical controls and only limited additional supply measures. It was particularly clear in ruling out any additional dams, and did not consider an option previously favoured by Sydney Water of raising the wall height of an existing dam[4].

Exhibit 54

RECENT NSW GOVERNMENT MEASURES TO RESPOND TO SYDNEY'S WATER SHORTAGE

"Sydney is using more water than is sustainable ... water could be a key limiting factor on Sydney's future growth and prosperity"*

Demand management and recycling measures	New supply measures	Options not considered or deferred
• New building standards requiring 40% reduction in water usage (BASIX)	• Extra pumps/pipes to access deeper water from some existing dams	• Additional dams: "There is no need for a twelfth dam ... would be very costly from a financial and environmental perspective ... very shallow with large surface area ... evaporative rates would be extremely high ... take nearly 10 years to build and fill ..."**
• Householder rebates for water efficient devices, rainwater tanks	• Access water from Shoalhaven at times of high flow	• Pricing reforms: "The Government will consider the water price reforms suggested by the Independent Pricing and Regulatory Tribunal"***
• Minimum level of water efficiency for all homes sold after July 2007	• Access groundwater for supply augmentation in droughts	
• Water efficient usage schemes for business and government	• Do feasibility study on desalination plants	
• Investment to reduce system leakage		
• Community education and awareness of water conservation		
• Water efficiency labelling for products		
• Expand recycled water schemes		

* Metropolitan Water Plan, 2004, p2, p4
** Metropolitan Water Plan, 2004, p8
*** Metropolitan Water Plan, 2004, p19

Source: NSW Government's Metropolitan Water Plan, 2004

Urban water should not be a cause of such concern. It should certainly not be used as a reason to constrain a city's growth, much less the economic growth of Australia.

[4] See Australian Financial Review article by former NSW Auditor-General Tony Harris, page 83, 18 March 2003. This point has been confirmed from other sources.

This is because there is much that can be done by all Australian Governments. Indeed, they need to:

- Recognise that they are pricing urban water as if it were freely available, when it is not
- Reconsider alternative sources of supply with a clearer idea of the underlying economics of them
- Allow urban centres to buy water that is currently being used for rural purposes at market rates
- Provide much sharper demand management signals particularly for high water users.

What follows elaborates on these points.

6.2 The 'hidden' urban water issue

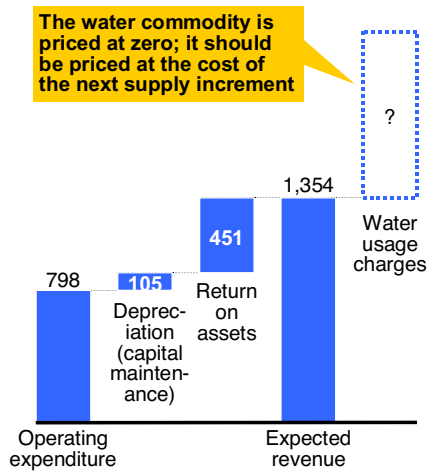
While it is clear that we face actual and potential urban water shortages and restrictions, what is not so clear is that we are pricing urban water as if it were a free good when it is not. This can be seen from Exhibit 55 which shows how Sydney Water's allowable revenue is calculated.

Exhibit 55

RESIDENTIAL URBAN WATER PRICING

Sydney Water revenue – forecast 2004

$ Millions



Some interesting facts

- Users in Sydney pay $1.32 for 1,000 litres (or 1 cent for 10 litres) of high quality drinking water delivered to the home 24 hours a day, 7 days a week
- The price of bottled water is $3,333 for 1,000 litres
- Some Sydney people are paying tens of thousands of dollars to sink bores to obtain garden water to avoid current water restrictions

Source: IPART Determination on Sydney Water Corporation Prices of Water Supply, Wastewater and Stormwater services from 1 July 2003 to 30 June 2005

Current urban water pricing in Australia is based on recovering the costs incurred, but it prices the water itself at zero. This treats water as if it was a free good in plentiful supply. The prices recover the required operating expenditure, they allow for the maintenance of capital (depreciation) and they allow a return on all of the physical assets such as the pipes and water treatment facilities. This would be appropriate if water were freely available, but it is not appropriate otherwise.

When a commodity is scarce it should be priced at the cost of the next supply increment. This allows the supplier to assess properly and fund the next needed increment of supply, and it signals to users the true cost to the economy of what they are consuming.

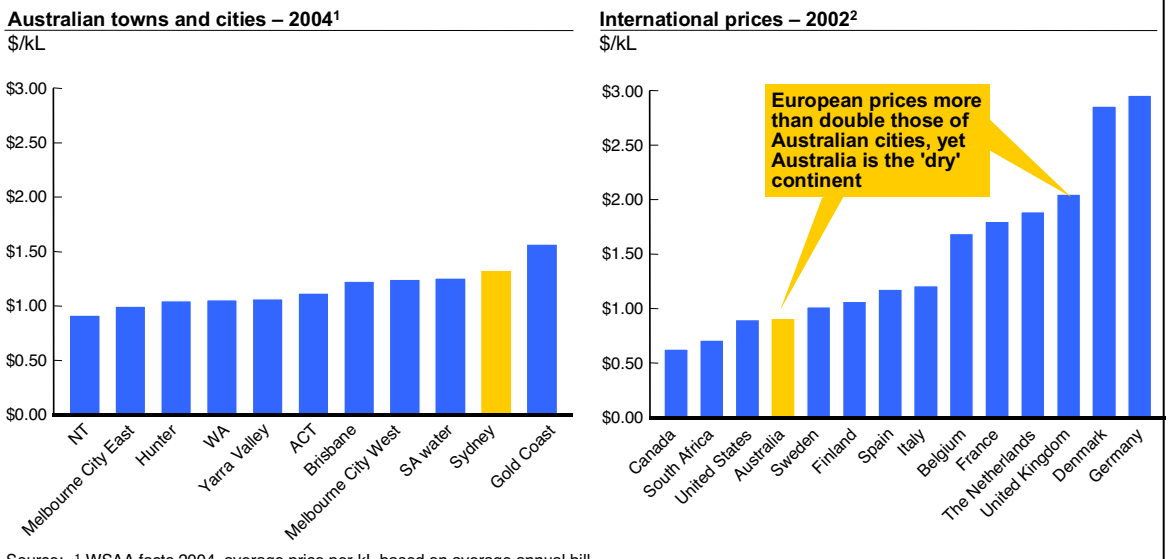
It is almost tautologous to suggest that there will be excess demand for any good that is priced too low. In this sense the shortage of urban water could be said to be largely an outcome of public policy choices that we have made as a society. When users in Sydney pay 1 cent for every 10 litres of high quality drinking water delivered to the home 24 hours a day, 7 days a week, it does not seem surprising that demand is in danger of exceeding supply.

6.3 Australia's urban water prices compared to international levels

While Sydney's water prices are amongst the highest in Australia, they appear low when compared to other developed countries. Exhibit 56 provides some relevant comparisons based on readily available data.

Exhibit 56

COMPARISON OF URBAN WATER PRICES



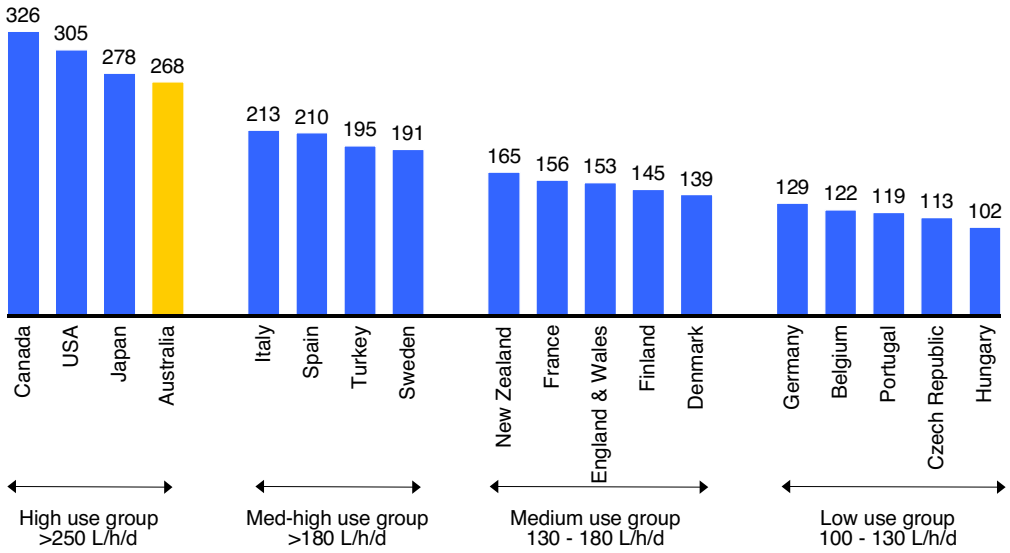
Source: [1] WSAA facts 2004, average price per kL based on average annual bill
[2] Farmhand, Talking Water, 2004

By contrast, Australia's per capita consumption of water by households is high compared to many other OECD countries. This is shown in Exhibit 57 which is based on OECD data.

Exhibit 57

ESTIMATES OF PER CAPITA HOUSEHOLD WATER CONSUMPTION—SELECTED OECD COUNTRIES

Litres per head per day*



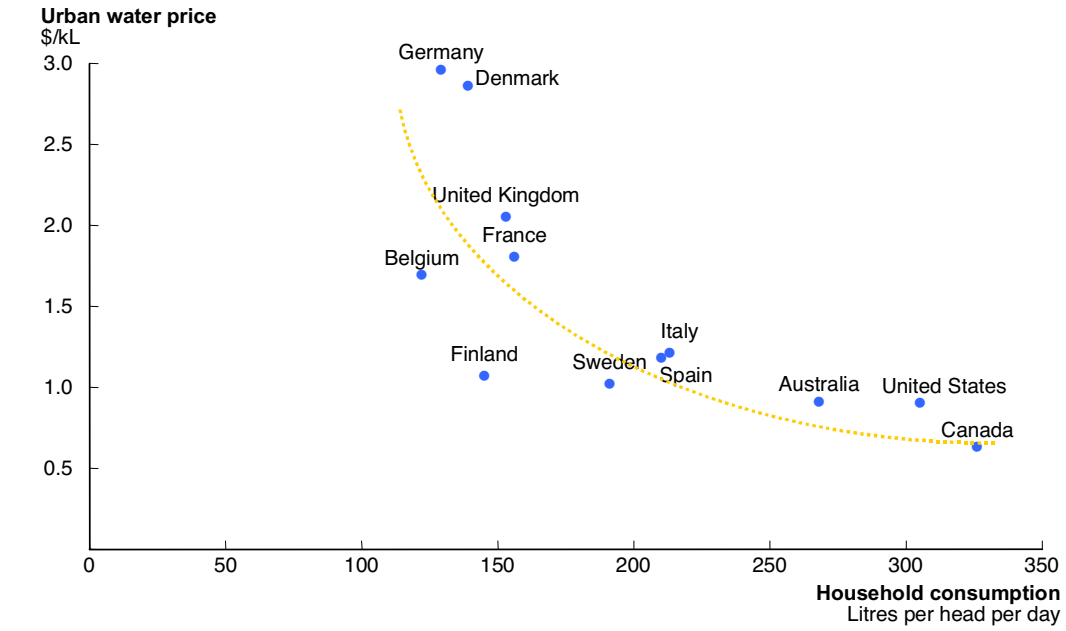
* Data used are estimates from 1993 - 1997, with the exception of USA (1980 estimate) and New Zealand (1985 estimate)

Source: Household Water Pricing in OECD Countries, OECD, 1999

There is, of course, a link between these two data sets. Indeed, the correlation between the price paid and demand is exactly what one would expect and results in a conventional demand curve. This is shown in Exhibit 58.

Exhibit 58

URBAN WATER PRICES VERSUS PER CAPITA HOUSEHOLD CONSUMPTION



Source Farmhand, Talking Water, 2004; Household Water Pricing in OECD countries, OECD, 1999

It is also worth mentioning that if all outdoor water use is excluded (outdoor use represents 27% of total usage in Sydney) then Sydney still consumes considerably more than the average European city. That is, the above data may not be explained by households in Australia having more extensive gardens, or needing more water for them to replace a lack of rainfall.

6.4 Examining alternative sources of supply

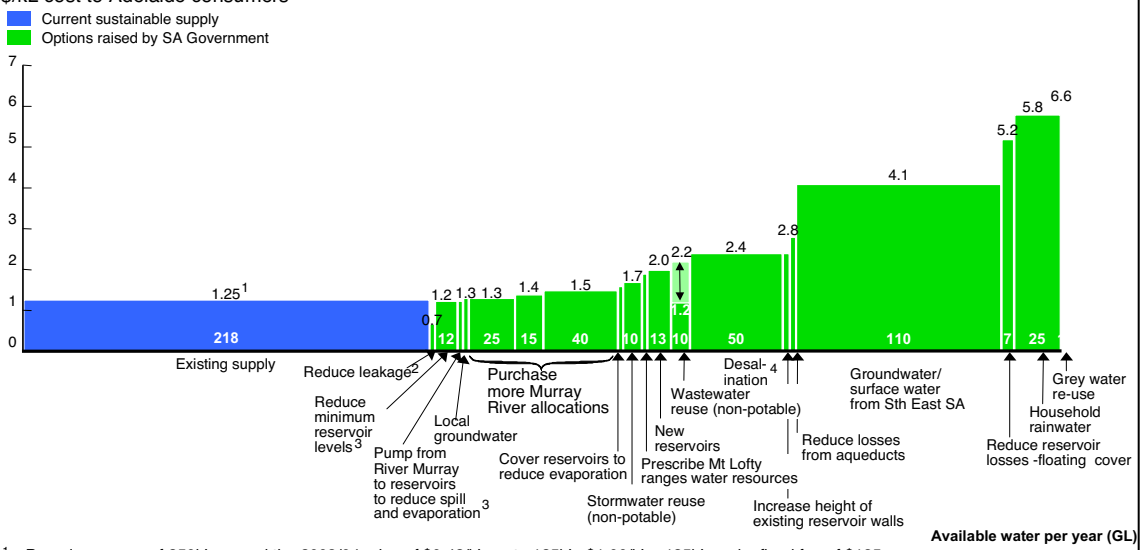
When alternative sources of urban water supply are considered it seems that they cost more than consumers are currently paying. This can be seen from some recent papers released by the South Australian and New South Wales Governments.

There seem to be many available water supply options for Adelaide. These are shown in Exhibit 59 which lists options that range from purchasing further allocations from the Murray River, to new reservoirs, and to desalination.

Exhibit 59

CURRENT PRICE OF ADELAIDE WATER COMPARED TO ALTERNATIVE SOURCES OF SUPPLY

$/kL cost to Adelaide consumers



[1] Based on usage of 250kL pa and the 2003/04 price of $0.42/kL up to 125kL, $1.00/kL >125kL and a fixed fee of $135 pa
[2] A preliminary estimate suggested 3GL of leakage reduction is possible at ~$0.7/kL, further reductions may be possible, but at a higher cost
[3] These options would decrease the security of supply from reservoirs
[4] Costing of desalination based on 50GL, potential available water may be unlimited

Source: Adaptation from BCG research using additional information from Water Proofing Adelaide: Exploring the issues–a discussion paper, South Australian Government, 2004; WSAA facts 2003, Water Services Association of Australia

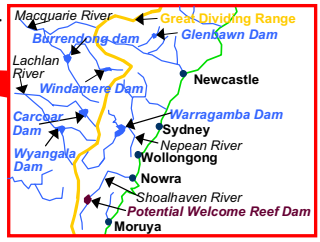
While these options would all require higher prices to consumers to justify them, they do appear to provide large quantities of additional water. Purchasing additional Murray River allocations could increase current sustainable supplies by one third, while desalination may provide as much water as Adelaide could require in the foreseeable future.

In relying on the purchase of further rural allocations from the Murray River South Australia may need the co-operation of other Governments, both State and Commonwealth. This is because the Murray River flows can be unreliable given what is taken by upstream users.

It seems that Adelaide, Melbourne, Perth and Hobart all have an additional source of urban water via purchasing rural allocations. This potential is illustrated in Exhibit 60. The main objection to doing this may well be political, with resistance to city people taking water from the bush.

Exhibit 60

LOCATION OF AUSTRALIAN CITIES AND MAJOR WATER RESERVES



Urban and Rural Water prices

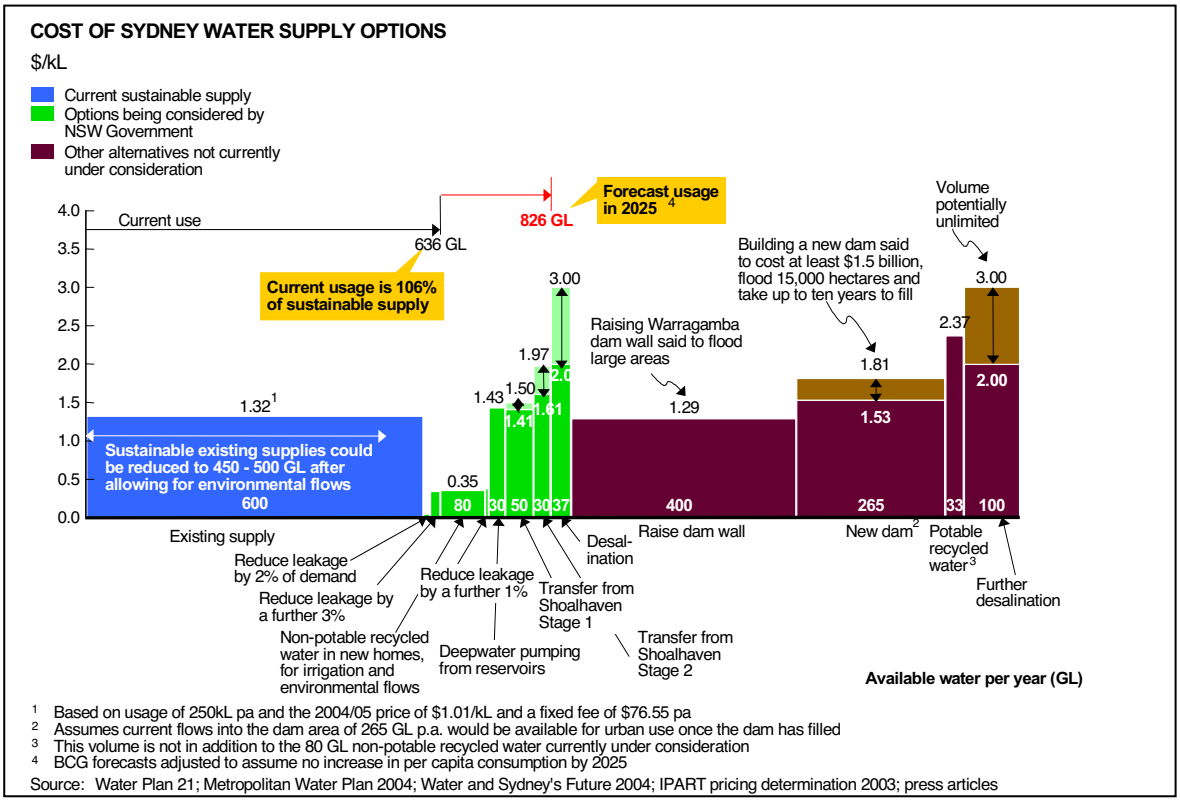
$/ML average variable and fixed charges

Location	Urban	Rural
Adelaide/ Riverland	$1,200	$48
Melbourne/ Goulburn River	$1,000	$35

Source: State Water Annual Report 2002-03; Water charges and Inter-regional Trade, ABARE 2004

With the statement by the NSW Government concerning a lack of urban water potentially constraining Sydney's growth, it is worth looking more closely at Sydney's water supply options. These are illustrated in Exhibit 61. This Exhibit shows the current sustainable supplies, the NSW Government's proposed increased supply options and other supply options.

Exhibit 61



1 Based on usage of 250kL pa and the 2004/05 price of $1.01/kL and a fixed fee of $76.55 pa
2 Assumes current flows into the dam area of 265 GL p.a. would be available for urban use once the dam has filled
3 This volume is not in addition to the 80 GL non-potable recycled water currently under consideration
4 BCG forecasts adjusted to assume no increase in per capita consumption by 2025

Source: Water Plan 21; Metropolitan Water Plan 2004; Water and Sydney's Future 2004; IPART pricing determination 2003; press articles

The NSW Government has identified a range of options that appear to be able to meet water demand in 2025 of a likely 826GL. These involve reducing system leakage, increasing recycling of non-potable water in new homes, deeper water pumping from existing reservoirs, using water from the Shoalhaven River and investigating a desalination plant.

The NSW Government, however, did express concern that the currently assumed 600 GL of sustainable supply capacity for Sydney's water itself may need to be reduced to allow for increased environmental flows. If this is so other supply options will need to be considered such as desalination.

Desalination is widely used as a means of providing fresh water supplies in many countries. Some summary information is included in Exhibit 62. Desalination capacity is, of course, considerable. As has been highlighted in the recent Western Australian election a new desalination plant is currently being built to supply Perth.

Exhibit 62

EXISTING USAGE OF DESALINATION FOR WATER SUPPLIES

Over 120 countries around the world use desalination to some extent

Perth has recently commissioned a 45GL pa desalination plant for potable water supplies at an estimated capital cost of $346m. When annual operating costs are included the water supplied will cost around $1.11/kL*

Region	Installed capacity (GL p.a.)
Saudi Arabia	2,210
United States	1,934
United Arab Emirates	1,657
Spain	732
Kuwait	723

- **Desalination in the USA is primarily used to convert brackish groundwater into drinking water supplies (particularly in Florida)**
- **However, both Florida and California are considering large scale desalination of sea water as a source of drinking water**

* This cost includes the capital cost of associated infrastructure such as pipelines and pumping stations; may be higher for other locations

Source: California Water Desalination Taskforce; Water Corporation website; The Australian "The West's Water War", 4 February 2005

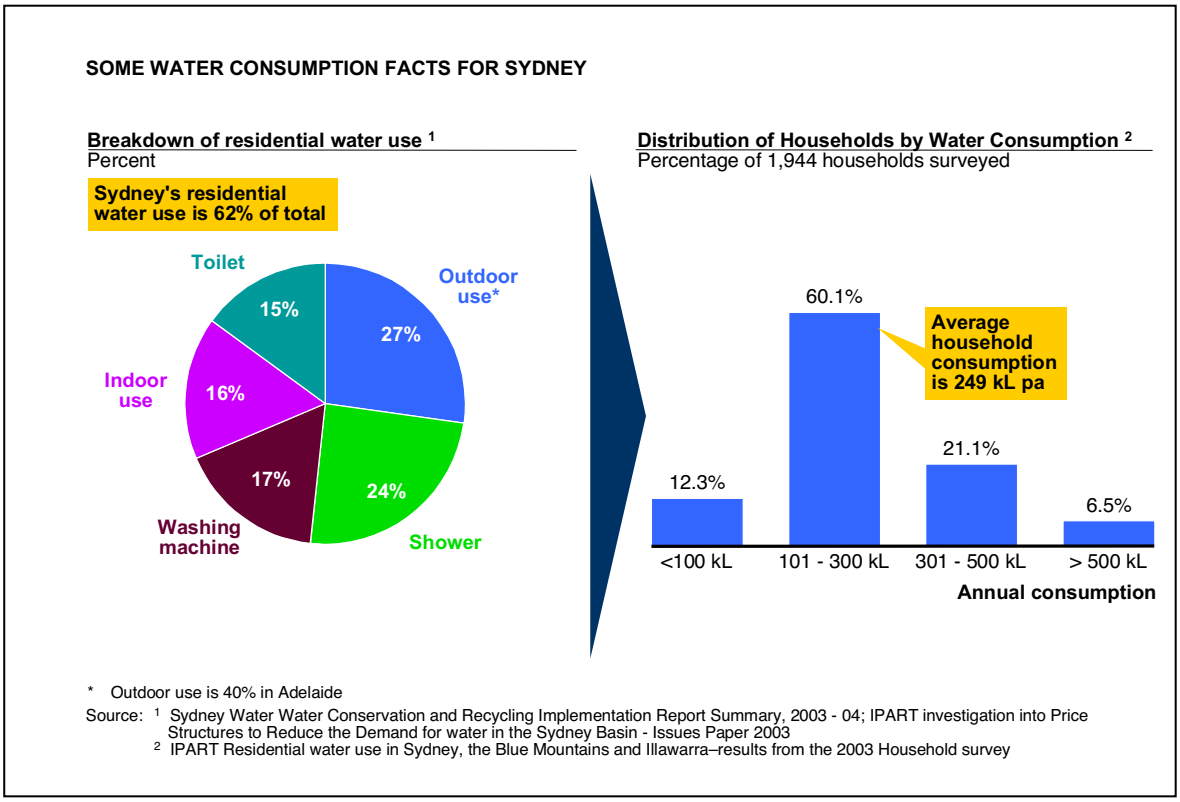
Using desalination will likely require higher water prices to make it a financially attractive investment for Sydney Water. Not only are such higher prices appropriate, if indeed desalination is the next most appropriate supply increment, but higher prices would also have important benefits in reducing demand.

6.5 The likely responsiveness of demand to price

Better signals for demand management could make a significant contribution to balancing supply and demand for urban water. This conclusion can be drawn from work by the NSW Independent Pricing and Regulatory Tribunal (IPART), international studies and common sense.

First some key water consumption facts. Exhibit 63 shows the breakdown of residential water use and the distribution of that water use in Sydney. Note that these usage patterns do vary widely between cities. It can also be seen that average annual household water consumption is 249,000 litres (or 249 kL), and that approximately 28% of households consume greater than 300 kL, with 6.5% consuming more than 500 kL.

Exhibit 63

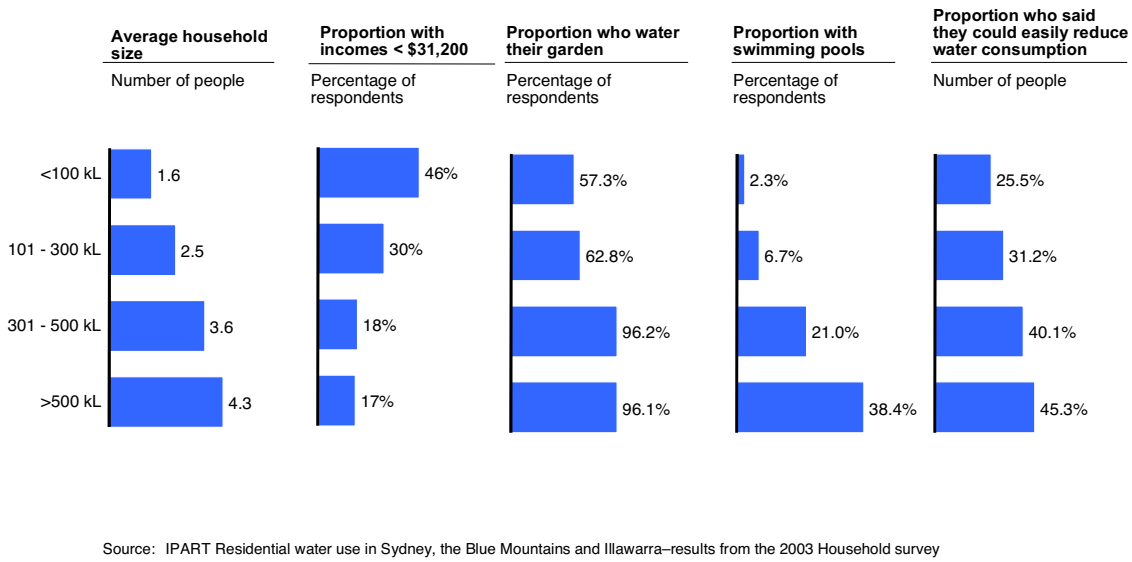


It is no surprise that high users have larger families, more income, more gardens and swimming pools. The results of a recent survey of consumption patterns are shown in Exhibit 64. What may be of some surprise is that over 25% of low users and over 40% of high users said they could easily reduce their water consumption. This may reflect the fact that approximately 30% of water use is discretionary.

Exhibit 64

SELECTED CHARACTERISTICS OF HOUSEHOLDS BY ANNUAL WATER CONSUMPTION

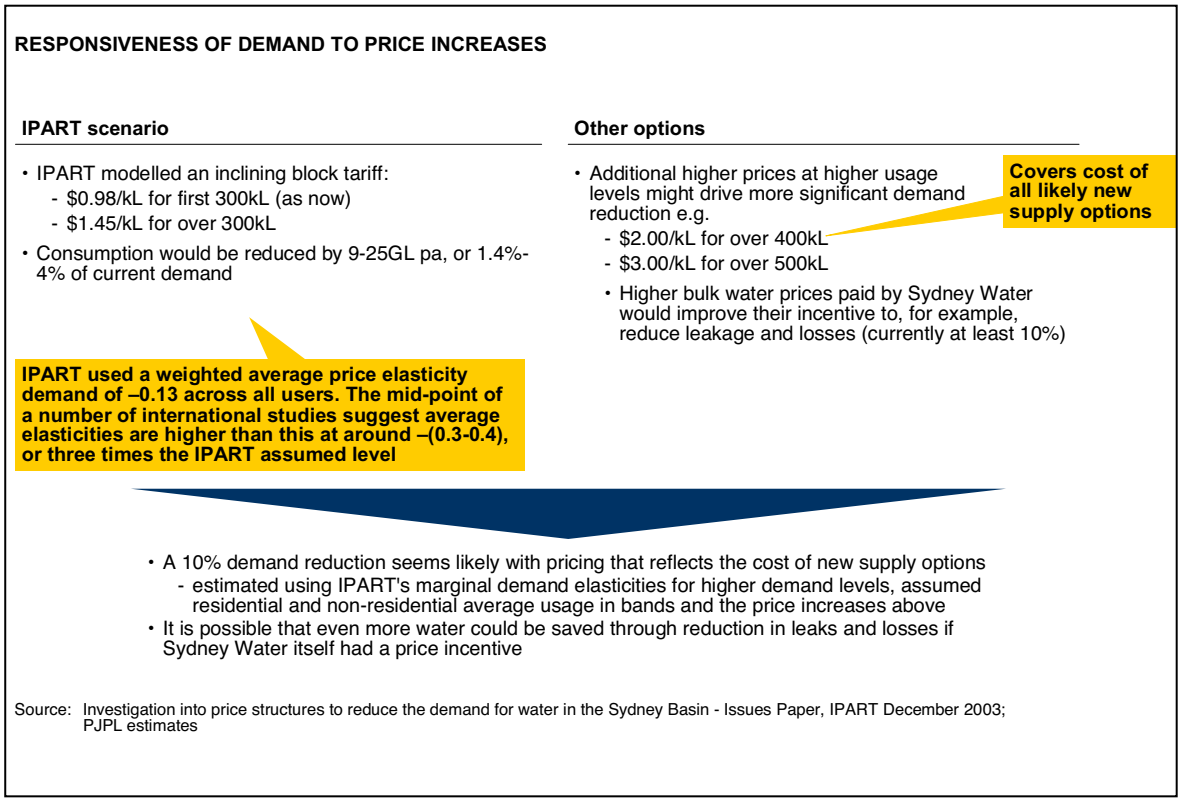
Percentage of 1,944 households surveyed



Source: IPART Residential water use in Sydney, the Blue Mountains and Illawarra–results from the 2003 Household survey

IPART has suggested some alternative pricing regimes and the effects these may have on consumption levels. One such scenario is shown in Exhibit 65. With a 50% increase in the usage charge for water for higher (> 300 kL) water users IPART has estimated a reduction in demand of 1.4-4%. These forecasts used conservative estimates of the elasticity of demand for water by comparison with international studies.

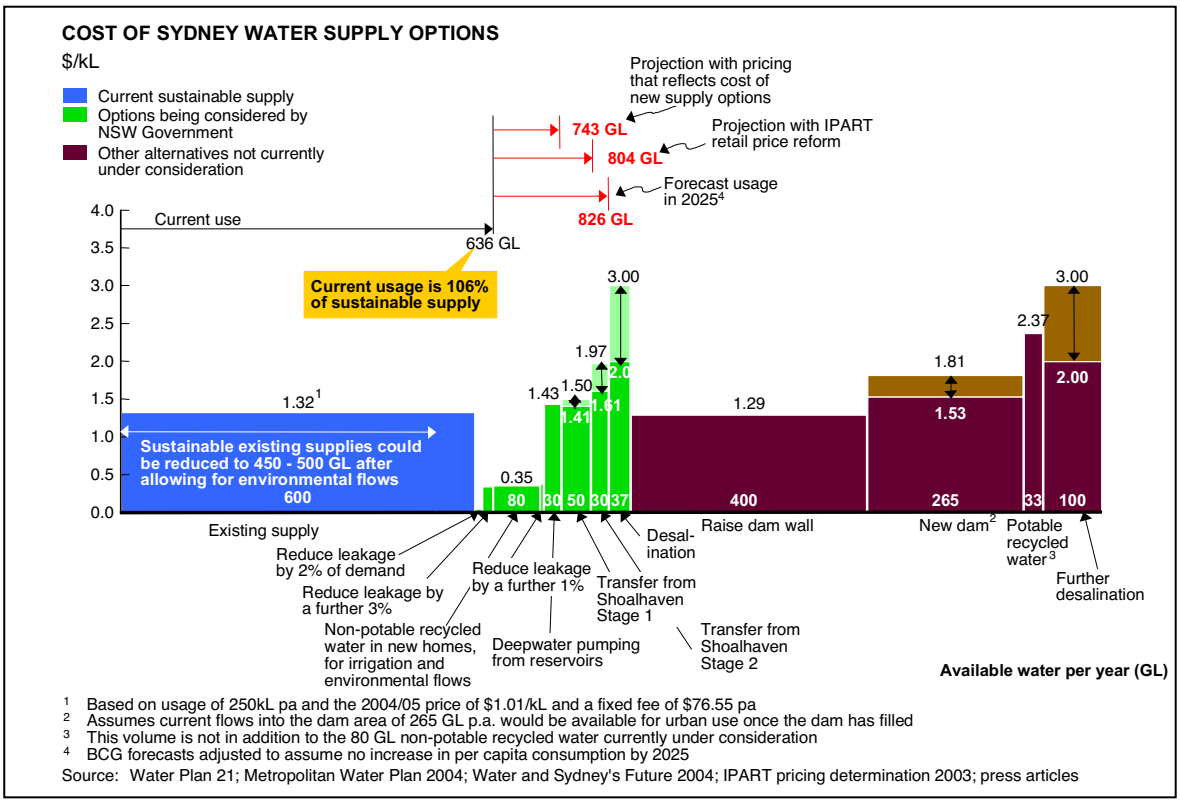
Exhibit 65



It may be that even higher price increases for larger users could have more dramatic effects. Also shown in Exhibit 65 are some 'guestimates' of the effects of pricing to high users at the likely cost of desalination. A 10% reduction in water demand is possible and this was felt to be a reasonable estimate after some discussion with those experienced in the water industry.

If we return to the water supply curve for Sydney we see that a 10% reduction in water usage/wastage would see a desalination plant not required for many years to come. This is shown in Exhibit 66. Reduced leakage and water transfers from the Shoalhaven could meet Sydney's water needs to 2025. Some of these projects, however, would not be economically justified at today's prices.

Exhibit 66



1 Based on usage of 250kL pa and the 2004/05 price of $1.01/kL and a fixed fee of $76.55 pa
2 Assumes current flows into the dam area of 265 GL p.a. would be available for urban use once the dam has filled
3 This volume is not in addition to the 80 GL non-potable recycled water currently under consideration
4 BCG forecasts adjusted to assume no increase in per capita consumption by 2025

Source: Water Plan 21; Metropolitan Water Plan 2004; Water and Sydney's Future 2004; IPART pricing determination 2003; press articles

6.6 Concluding Comments

While Australia currently faces urban water shortages this need not be the case in future if appropriate policies are followed. There are sufficient alternative supply options available through buying more rural allocations, improving incentives to reduce leakage from pipes, extending existing reservoirs and desalination. Although some of these may require higher water prices to high users (such as high income households and industry) to justify them, such higher prices would make economic sense in terms of signalling to high users the cost of the resources required to meet their needs.

Whatever policy options are pursued it is clear that urban water issues should not be used as a reason to restrict the growth of a city, or of our nation.

CHAPTER 7

THE INGREDIENTS FOR A SUCCESSFUL INFRASTRUCTURE REFORM AND RESTORATION AGENDA

CHAPTER 7

The ingredients for a successful infrastructure reform and restoration agenda

7.1 The need for a co-operative Commonwealth/State approach

The only way reform and restoration will occur in the areas discussed in this Report is via a co-operative Commonwealth/State approach. This is illustrated in Exhibit 67. Infrastructure reforms are complex, and so require change in many policy areas. In addition, the infrastructure itself either physically crosses state borders or, where it does not, the same problems are replicated across the country and the effects of poor policy are felt nationwide.

Exhibit 67

LOGIC UNDERPINNING A CO-OPERATIVE COMMONWEALTH/STATE APPROACH

Reform area	Example need for Commonwealth/State co-operation
• Energy	• Transmission lines cross State borders; market needs national regulation and policies; key impediments are national issues (eg greenhouse policy)
• Inter-capital freight	• Commonwealth/State Ministers set road access charges; roads/tracks cross State borders
• Urban transport	• Urban congestion pricing would benefit from 'cover' of agreed COAG pricing principles; may need adjustment in some Commonwealth levies e.g. on fuel
• Rural water	• Rivers cross State borders, need national approach to trading and standards, and need Commonwealth money
• Urban water	• Agreed COAG pricing principles would give reform the needed 'cover'; urban water solutions are linked to rural water issues

In energy, inter-capital freight and rural water we have, or want to create, national markets. We want to avoid electricity companies building power in one state when there is plentiful supply in another, to be able to trade water interstate on a common basis, and the rules for trucks and trains which need to change are already set by national bodies.

With urban water and transport the need for a Commonwealth/State approach can be just as compelling, albeit more subtle. On the one hand in both cases some guiding principles endorsed by COAG would make selling the required solutions more straightforward. On the other hand, both topics are clearly linked to national issues. In the case of urban water, the solution needs to be linked to rural water, and the ability to trade between the two. In the case of urban transport, the current road user charges include Commonwealth fuel levies and these may need to be adjusted to create room for congestion charges.

The key point to emphasise here is the word 'co-operative'. The Commonwealth and the States need to work together in a climate of mutual respect. All Governments have a legitimate perspective that can contribute to solving the problems.

The Commonwealth needs to realise that the States are often closer to the issues. While they can sometimes get 'lost' in the detail and the complexity of change, a good understanding of these issues is fundamental to successful reform formulation and implementation.

The States, however, need to realise that they may need a wider perspective and framework for change. It is sometimes easier to see why change should not be made than why it should.

A strong partnership between the Commonwealth and the States is very powerful when working well. Confusion and inertia at best and poor policy outcomes at worst can result when the trust and links break down.

7.2 The ingredients for a successful infrastructure reform and restoration agenda

Within a co-operative Commonwealth/State approach there are five ingredients for a successful reform agenda. These are drawn from what has worked well in the past, and are summarised in Exhibit 68. It is useful to discuss each ingredient in turn.

Exhibit 68

OTHER INGREDIENTS FOR A SUCCESSFUL INFRASTRUCTURE REFORM AND RESTORATION AGENDA

Ingredient	Elaboration
1. Shine a continuing light on the issues	• Significant reform agendas do not succeed when they take people by surprise. The nature of the problem and the solution directions must be widely understood by the community
2. Encourage a wide, integrated agenda	• The solutions are usually linked and some people will like some measures, not others
3. Ensure Heads of Government stay closely engaged	• Water, transport and energy reforms in the past, for example, have slowed when heads of government consider that these issues are no longer of major interest to them
4. Provide Commonwealth financial incentives	• Incentives always help; and they help State Ministers explain the need for change
5. Monitor progress in a transparent way	• An implementation monitoring body has worked well under competition policy

7.2.1 Shine a continuing light on the issues

It is often said that reform is too difficult, and that the public will not accept change. This is not true. People are naturally, and wisely, resistant to change and so need to be convinced of the need for it.

The first ingredient, therefore, is to prepare people for change in advance. Probably the most difficult reform of all, reducing tariffs, was in the end widely welcomed once the underlying problems and consequential effects of high tariffs were well understood.

In this case the aggregate and the specific benefits of infrastructure reform and restoration need to be argued.

The likely aggregate benefits of reform

In aggregate the benefits of infrastructure reform and restoration will be very large: higher living standards, improved amenity, more jobs and consumption. This mix of benefits comes from healthier rivers, more available water and less congested cities; and from reduced freight bottlenecks, low cost and available electricity and our rural water flowing to its highest value rather than historical use.

In the time available we have not modelled the benefits from such a reform and restoration package. It is, however, possible to provide sensible 'guestimates' once a range of past work is taken into account, as follows.

- Research prepared by ACIL for the 2002 COAG Energy Market Review estimated the benefits of further energy reform (excluding gas reform) at 0.41% of GDP, and the reforms we have outlined are sufficiently similar to those modelled for us to use this estimate [5]

- Recent work by Access Economics for PJPL estimated the benefit of some rail reforms at 0.15% of GDP, based on a much more modest reform program than we have proposed[6]. With more far-reaching reforms (which would include the benefits of constructing the inland rail, which would remove a major bottleneck), the GDP benefit should be at least double that in total, or 0.3% of GDP

- When considering rural water it is important to note that little modelling of the likely benefits has been done. Water use, however, as an input to production is roughly half the value of electricity based on the input-output tables of the Australian Bureau of Statistics. The Productivity Commission recently modelled the GDP benefit that they consider has come from the electricity reforms implemented so far at 0.67%.[7] If we take half of the total electricity reforms (0.67% + 0.41% from the reforms to come), we could assume that the benefit from extensive rural water reform could be at least 0.5% of GDP

- The same work by the Productivity Commission estimated that the benefits from urban water reform so far (increases in productivity and reductions in costs, and some pricing reform) have contributed 0.35% to GDP growth. The future agenda we are proposing should deliver at least the same gains as the existing supply constraints are released and as demand management benefits are gained

- The Productivity Commission also estimated the benefit of urban transport reforms so far as a 0.13% boost to GDP. These reforms were largely the productivity reforms in Victoria, which can be replicated in other cities. Using estimates of the benefits of congestion pricing (time saved at average hourly wages less likely congestion charges) we calculate that an additional, say, 0.25% boost to GDP could be achieved, giving a likely total of 0.38%.

[5] Towards a Truly National and Efficient Energy Market, COAG Energy Market Review Final Report 2002

[6] The Future for Freight, Report prepared by PJPL for the ARA

[7] Modelling Impacts of Infrastructure Industry Change over the 1990s, Productivity Commission, November 2004

The sum of the 'guestimates' described above comes to close to 2% of GDP, or ~$16 billion. With an 8% real discount rate and 3% real GDP growth this would amount to a boost to GDP of over $300 billion in net present value terms.

The above figuring is, of course, extremely approximate. If anything, however, it could be conservative. The estimates of the gains from full water trading in particular may be low given the potential for new investment in higher value agriculture that such trading could allow. In addition, of course, we have only examined five particular infrastructure sectors.

Specific examples of reform benefits

We have already indicated some of these. Reform and restoration of our infrastructure could see fewer/no physical water restrictions, a healthy Murray River, additional gas-fired peaking generation in NSW, a new inland rail corridor and far fewer trucks on our roads, and higher car travel speeds in Melbourne (and other cities).

A reform and restoration agenda for our infrastructure should be an extremely attractive agenda to sell.

7.2.2 Encourage a wide, integrated agenda

The history of the National Competition Policy reforms in particular illustrates the benefits of a wide, and linked, agenda. It is always the case that people will favour some reforms while being more hesitant about others. People also need to see that there is more at stake than one reform area. Any specific sacrifice they may be required to make may be outweighed by benefits in other areas.

7.2.3 Ensure Heads of Government stay closely engaged

This is fundamental. The history of infrastructure reform is that momentum is often lost once the Heads of Government consider that it is no longer of major interest to them.

The Heads of Government need to agree the changes, launch them, and then monitor their implementation very closely. As we explained with water trading the 'devil' is always in the implementation detail.

7.2.4 Provide Commonwealth financial incentives

Commonwealth financial incentives will be needed for a successful reform and restoration program for at least three important reasons.

First, they provide legitimacy for the Commonwealth guidance and framework-setting that will be required. The States have the largest 'hands-on' responsibility and it will help if they see that the Commonwealth brings practical help to the table, not just what they may see as rhetoric.

Second, of course, the money helps. New infrastructure needs to be built, and some water allocations need to be purchased.

Third, and at least as important, the financial incentives provide State Ministers with additional reasons for the changes they will need to sell. Whatever the inherent logic of the reforms it helps if, in addition, State Ministers can say there was extra money (say, for schools) on offer which could not be refused.

7.2.5 Monitor progress in a transparent way

Having an arms-length institution to monitor and report on implementation in particular can be very valuable. The National Competition Council has played this role in National Competition Policy (NCP).

It would also be helpful to have an institution that could, say, report annually not just on implementation progress but also on asset performance and policy effectiveness. For example, what is happening to traffic congestion and rail speed restrictions, how have various demand management schemes worked and what has been the importance of price signals, and what is the state of river health and urban water supplies.

7.3 Concluding Comments

Reforming and restoring our infrastructure represents an exciting agenda. Pursued and implemented well it can bring very large benefits in terms of improved living standards and amenity.

The main policy directions are clear, as are the ingredients for a successful program of change.

Now is the time to embrace this agenda given the clear problems our infrastructure faces currently and will face in the future. Perhaps it is best to conclude with an abbreviation of the quotes from the Commonwealth's Auslink papers referred to in Chapter 3.

> *"Relying on the status quo to address these challenges is clearly not in Australia's interest. There is no 'do-nothing' option. Incremental change is also inadequate."*
>
> *"Australia cannot afford poor and uncoordinated infrastructure decisions that impose high costs on the community, the economy and the environment."*

Notes