9 Water

Water is a significant Australian industry. It has assets of similar magnitude to those of the electricity, telecommunications and airline sectors. In value added terms, water and sewerage is almost one quarter the size of agriculture, about 40 per cent of the size of the electricity industry and almost three times the size of the gas industry. Australians use around 24 000 gigalitres of water each year, of which about 80 per cent comes from surface water and 20 per cent from groundwater. In particular, water use by agricultural industries is substantial, accounting for about 70 per cent of all water used. Urban and industrial consumption is also significant.

Australia has a history of excessive water extraction, which has had some severe consequences. Many river systems are stressed, with resulting loss of productive land, poor water quality and reduced biodiversity. The 2000 National Land and Water Resources Audit found, for example, that one-third of assessed river reaches had impaired aquatic biota, over 85 per cent had significantly modified environmental features, over 80 per cent were affected by catchment disturbance and over half had modified habitat (NLWRA 2000).

Recognising these and other problems, the Council of Australian Governments (CoAG) agreed in 1994 to a water resource policy for Australia and a strategic framework for water reform, with the objective of developing an economically viable and ecologically sustainable water industry. CoAG incorporated water reform into the National Competition Policy (NCP) in 1995, after considering a 1994 report by the Working Group on Water Resource Policy. This report found that, while there were some advances, there were problems within the water industry including:

- approaches to pricing that often resulted in commercial and industrial users of water services, in particular, paying more than the costs of service provision;
- past investment decisions that were proving to be suboptimal both from an economic and an environmental perspective;
- major asset refurbishment needs in rural areas for which, in general, adequate financial provision had not been made;
- limits on opportunities to trade water entitlements to enable water to be employed in higher value uses;

- service delivery inefficiencies;
- a lack of a clear definition concerning the roles and responsibilities of institutions in the industry; and
- issues involving water use and the wider natural resource base, including widespread natural resource degradation that has an impact on the quality and/or quantity of the nation's water resources.

This chapter discusses the elements of the CoAG water resource policy and strategic reform framework (the CoAG water reform agreement) that the Council considered in this 2003 NCP assessment. It also summarises the progress that each State and Territory made in implementing the CoAG water reform agreement, focusing on the reforms assessed in 2003. Finally, it provides a brief overview of relevant work being undertaken by the Murray–Darling Basin Commission. The commission manages the River Murray system and advises the Murray–Darling Basin Ministerial Council on matters relating to the use of environmental resources in the basin, and its business unit (River Murray Water) provides bulk water services to New South Wales, Victoria and South Australia. Volume 3 of the Council's 2003 NCP assessment report contains a detailed discussion of each State and Territory's water reform activity and the Council's assessment of this activity against the requirements of the CoAG water reform agreement. Volume 3 also discusses relevant work by the Murray–Darling Basin Commission.

The CoAG water reform agreement

The CoAG water reform agreement established principles to guide all governments' reform of water industry arrangements. The agreement encompasses: pricing reforms based on the principles of consumption-based pricing and full cost recovery; the elimination of inefficient cross-subsidies and the transparency of remaining cross-subsidies; requirements for new rural water infrastructure to be economically viable and ecologically sustainable; the clarification of water entitlements and their separation from land title; the allocation of water to the environment; the facilitation of water trading to allow water to be used where it is most valued; various institutional reforms aimed at improving efficiency; and measures to enhance public consultation and participation in the reform program. Water reform thus shares the economic efficiency objectives of the other elements of the NCP. It is unique, however, in that it takes an integrated approach that addresses together the environmental, economic and social issues associated with water use.

When it reached the agreement on water reform, CoAG considered that the program could be implemented in five to seven years, although it noted that factors such as the availability of financial resources to help with structural adjustment and asset refurbishment would influence this timetable. CoAG established completion dates for the major reform elements over the period to the 2001 NCP assessment. The 14 January 1999 tripartite meeting on water reform extended the timeframe for implementing the water allocation (including to the environment) and trading obligations to 2005, by which time allocation and trading arrangements need to be substantially in place for all river systems and groundwater resources in governments' endorsed implementation programs. The extension also recognised constraints on implementation, including: the complexity of some of the reforms; the need for extensive public consultation and education before implementing changes; the significance (including financial significance) of some of the demands on governments, institutions and other stakeholders; and the low base from which many of the reforms have commenced.

Because of the broad scope of the reform program, CoAG senior officials scheduled different elements for consideration in each annual NCP assessment. In this context, the 2003 NCP assessment considered governments' progress with implementing urban water and wastewater pricing reforms, intrastate water trading arrangements, institutional reform matters, and the implementation of the National Water Quality Management Strategy. The 2003 NCP assessment also considered two matters that the Council found in previous assessments not to be sufficiently advanced: progress in several jurisdictions towards making water available for environmental purposes in river systems that are overallocated or deemed to be stressed, and New South Wales's implementation of its new access licence system and registry. Also, in accord with the Competition Principles Agreement, the 2003 assessment considered all governments' programs of review and reform of their stock of water industry legislation that restricts competition. Under the Competition Principles Agreement, governments must remove competition restrictions unless they are shown to provide a net benefit to the community and are necessary to achieve the objective of the legislation. Finally, this 2003 NCP assessment considered two matters that are standing items in every assessment: the economic and ecological justification for new investment in rural water infrastructure (where there are relevant projects) and public education and consultation activity.

The 2004 NCP water assessment will consider rural water pricing and cost recovery, the implementation of water rights systems, including allocations to the environment, and water trading arrangements (both interstate and intrastate). The NCP assessment in 2005 will consider governments' implementation of the entire program. In this 2003 NCP assessment, the Council reported on governments' progress towards achieving the CoAG objectives in these areas.

Water and wastewater pricing

Full cost recovery

Water and wastewater businesses are to set prices to earn sufficient revenue to ensure their ongoing commercial viability but avoid monopoly returns. To this end, governments agreed that prices should be set by the nominated jurisdictional regulator (or its equivalent) as follows.

- To be viable, a water business should recover at least the operational, maintenance and administrative costs, externalities, taxes or tax equivalents (not including income tax), the interest cost on debt, dividends (if any) and make provision for future asset refurbishment/replacement. Dividends should be set at a level that reflects commercial realities and simulates a competitive market outcome.
- To avoid monopoly rents, a water business should not recover more than the operational, maintenance and administrative costs, externalities (defined for the purpose of the pricing obligation to be the natural resource management costs attributable to and incurred by the water business), taxes or tax equivalent regimes, provision for the cost of asset consumption and cost of capital, the latter being calculated using a weighted average cost of capital.
- In determining prices, the economic regulator or equivalent should determine the level of revenue for a water business based on efficient resource pricing and business costs. Specific circumstances may justify transition arrangements to that level. Cross subsidies that are not consistent with efficient and effective service, use and provision should ideally be removed.
- Where service deliverers are required to provide water services to classes of customer at less than full cost, the cost of this should be fully disclosed and ideally paid to the service deliverer as a community service obligation.
- Asset values should be based on deprival value methodology unless an alternative approach can be justified, and an annuity approach should be used to determine medium to long term cash requirements for asset replacement/refurbishment.
- Transparency is required in the treatment of community service obligations, contributed assets, the opening value of assets, externalities including resource management costs, tax equivalent regimes and any remaining cross subsidies.

Reference: CoAG water reform agreement clauses, 3(a)–3(d); guidelines for the application of section 3 of the CoAG water reform agreement and related recommendations in section 12 of the expert group report (the CoAG pricing principles)

Pricing has a significant impact on the amount of water used, the provision of future supply capacity and the total amount of investment in the water industry. Recognising the linkage between prices and consumption and investment activity, the CoAG water reform agreement sought to address a range of problems. Notably, the price of water and wastewater services in urban areas often had little regard to patterns of production, usually incorporated cross-subsidies that disadvantaged industrial and commercial customers, and, most importantly, provided no incentive to conserve water. For rural water, below-cost pricing distorted rural production decisions, encouraged wasteful water use and often led to water providers making insufficient financial provision for asset maintenance and replacement.

As recognised by the Expert Group on Asset Valuation Methods and Cost Recovery Definitions for the Australian Water Industry, prices need to reflect all known resource costs (Expert Group 1995, p. 14). In both urban and rural areas, the CoAG water agreement obliges water and wastewater businesses to set prices that are consumption-based and fully recover costs (including operating and maintenance expenses, administrative costs, natural resource management costs imposed on and incurred by the business, finance costs, depreciation expenses and a non-negative rate of return reflecting the opportunity cost of capital). Because most of the cost of providing wastewater services to domestic and small commercial consumers is fixed, use-based charges for services provided to these categories of consumers are less relevant, although charges for services provided to high level waste dischargers should be linked to use.

Water and wastewater businesses are generally the only provider of water and wastewater services in a geographic area. Reflecting this, the CoAG pricing principles impose a stricture that businesses avoid monopoly pricing. Prices should be set to recover no more than efficient business and resource management costs, with the rate of return on capital calculated using the weighted average cost of capital. Most States and Territories subject their monopoly water businesses to price regulation by the jurisdictional economic regulator.

Where service providers are required to provide services to classes of customers at a price below full cost, the cost should be fully disclosed and ideally paid to the service provider as a community service obligation. Cross-subsidies that create inefficiencies should be eliminated and those retained reported transparently. Governments have an obligation to explain the intent of any community service obligations and cross-subsidies to show that they do not undermine CoAG's overall policy objective of an efficient and sustainable water industry. The National Competition Council does not assess the adequacy of governments' explanations — rather it seeks to understand how in totality the community service obligations and cross-subsidies do not undermine CoAG's policy objective.

The water reform agreement set a timeframe for implementing the pricing reforms: 1998 for urban service providers and 2001 for those in rural areas. Following the 2001 NCP assessment, CoAG senior officials asked the National Competition Council to assess governments' implementation of urban and rural water pricing reforms in 2003 and 2004 respectively. Consequently, in this 2003 NCP assessment, the Council examined cost recovery by urban metropolitan and nonmetropolitan water and wastewater businesses, focusing on those with more than 1000 property connections. The Council also reported on progress towards cost recovery by rural water businesses. The Council considered the following questions in assessing governments' compliance with the CoAG obligation on cost recovery.

- Are urban water and wastewater businesses setting prices that achieve full cost recovery in accordance with the CoAG pricing principles? Pricing by water and wastewater businesses that fully recovers costs and is based on efficient resource pricing and business costs encourages efficient customer-driven service provision and appropriate price signals for consumers.

- Are urban water and wastewater businesses applying appropriate asset valuation methods and are businesses earning a real rate of return on the written-down replacement cost of their assets? Robust information on the replacement cost (real cost) of providing water infrastructure, rather than on measures such as historic cost (original purchase price), enables service providers to properly provide for asset replacement/refurbishment in prices. Achieving a non-negative rate of return safeguards against undermining the business's asset base. Factoring the cost of infrastructure into water and wastewater service prices using asset values based on the deprival value method (unless an alternative approach can be justified) better signals the true cost of water consumption.

- Are dividend payment policies and the dividend distributions by water and wastewater businesses reflecting commercial reality and simulating a competitive market outcome? Setting an upper limit for dividend distribution by government water service businesses — on the basis of the corporations law requirement that dividends be paid only out of profits (the current year's profit plus accumulated retained profits) — guards against water and wastewater service providers having insufficient financial resources to conduct their business and is consistent with the Competition Principles Agreement obligations on competitive neutrality.

- What natural resource management requirements are imposed on water businesses and what are the costs of these requirements? Are the costs transparently passed on to water users in prices? To remain viable, water and wastewater businesses need to recover the costs of any environmental and natural resource management obligations imposed on them by governments. Prices that reflect an appropriate level of environmental costs encourage environmentally-aware water use.

- Have cross-subsidies that are not consistent with efficient service provision been eliminated or, at a minimum, has the objective and quantum of remaining cross-subsidies been transparently reported? The Council does not consider whether the rationale for a cross-subsidy is appropriate. Rather, it looks for an explanation of the intent of any cross-subsidies, to ensure that they are consistent with an efficient and sustainable water industry.

- Do community service obligations (CSOs) have an explicit public benefit objective? Are they clearly defined, transparently reported and directly funded, with the cost fully disclosed? The Council does not consider whether the rationale for an individual CSO is appropriate. Rather, it looks for governments to demonstrate that CSOs are provided in a way that does not undermine the achievement of an efficient and sustainable water industry.

- Are urban water and wastewater businesses recovering rates and taxes (or rate and tax equivalents)? The CoAG pricing principles recognise taxes (or tax equivalents) as a component of the full (economic) cost that water businesses are to recover to ensure viability. Most urban water authorities have introduced tax equivalent regimes.

Consumption-based pricing

Water businesses are to set prices that reflect the volume of water supplied to encourage more economical water use. Businesses should implement a two-part tariff (comprising a fixed access component and a volumetric cost component), where this is cost-effective. Bulk water suppliers should set use-based charges (or a two-part tariff with an emphasis on the volumetric component).

Reference: CoAG water reform agreement, clauses 3(a)–(c)

Consumption-based (or volumetric) pricing provides a financial incentive to use water efficiently, thus rewarding water conservation. Conserving water can defer the need to invest in new water infrastructure, meaning potentially substantial savings to the community and environmental benefits. Most urban water providers had introduced consumption-based pricing by the 2002 NCP assessment. Some water businesses, however, were still setting prices linked to factors such as property value and providing free water allowances. Water charges linked to property value are less likely to provide a strong volumetric signal, and free water allowances in most cases inhibit incentives for economical water use. Wastewater charges can also have a volumetric focus where the charge is linked to the volume of waste and pollutant/toxicity load.

The Council looked for evidence that customers of water businesses with more than 1000 connections face a strong volumetric signal, and for entities discharging large volumes of waste and/or high-strength waste to face charges linked to the volume or strength of the discharge. Because use-based charges for domestic and small commercial consumers of wastewater are unlikely to be cost-effective, a fixed charge for wastewater services provided to these categories of consumers is appropriate.

Where businesses had not introduced consumption-based pricing by 30 June 2003 or committed to do so, the Council looked for robust evidence that the introduction of consumption-based pricing would not be cost effective. Where water charges (or a component of charges) continued to be based on property value or some other measure, the Council looked for governments to show that the method of charging does not undermine the principle of consumption-based pricing or lead to nontransparent cross-subsidies among different customer classes. Where free water allowances are retained or are being phased out over a period beyond 30 June 2003, the Council looked for evidence that most customers face a strong volumetric signal for the bulk of the water that they receive.

Water allocations and entitlements, including provision of water to the environment

Governments are to establish comprehensive systems of water entitlements backed by the separation of water property rights from land title and the clear specification of entitlements in terms of ownership, volume, reliability, transferability and, if appropriate, quality. Governments must have determined and specified water rights, including reviewing dormant rights.

A comprehensive system of water entitlements is defined as '*establishing water allocations to be put in place which recognise both consumptive and environmental needs. The system is to be applicable to both surface and ground water. However, applications to individual water sources will be determined on a priority needs basis (as determined by an agreed jurisdiction-specific implementation program).'*

Reference: COAG water reform agreement clause 4 and the January 1999 tripartite meeting. The tripartite meeting was held between representatives of the National Competition Council, the High Level Steering Group on Water (augmented by representatives from the Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) and the Australian and New Zealand Environment and Conservation Council (ANZECC)) and the Committee on Regulatory Reform to consider the implementation of the CoAG water reform framework. CoAG subsequently endorsed the recommendations from the meeting.

The CoAG water reform agreement acknowledged a need to better define the nature of water rights and to separate them from land title. The agreement also obliged governments to specify the amount of water (in terms of ownership, volume, reliability, transferability and, if appropriate, quality) available for extractive uses and to formally recognise the environment as a legitimate user of water. Governments must make an appropriate amount of water available for the environment. This amount should be determined, wherever possible, on the basis of the best scientific information available and account for the water required to enhance/restore the health of river systems and groundwater basins.

In previous NCP assessments, the Council found that all governments had legislated to establish systems of water rights separate from land title. Implementing these systems involves converting existing water allocations to the new entitlements systems, developing operational systems for registering entitlements, and developing and implementing water management plans for river systems and groundwater basins. Water management plans establish the amount of water that is available in a system and set out the arrangements for sharing that water among different users, including the environment.

In previous NCP assessments, the Council considered the legislative basis for establishing water rights in each jurisdiction. It also previously considered governments' progress in water management planning and in implementing the institutional arrangements needed to support effective water rights systems. On these matters, the Council draws the following interpretations from CoAG decisions.

- Water rights should be linked to a robust adaptive resource planning system.

- Water rights should be clearly specified so as to promote efficient trade within the social, physical and ecological constraints of the catchments.

- Water rights should be specified over the long term, exclusive, enforceable and enforced, transferable and divisible to provide for sustainability and community needs and to reflect the scarcity value of water.

- Water users should have the highest possible level of security in terms of the nature of the right, and absolute security of ownership. (While a 'lease in perpetuity' maximises security, it is not required by the CoAG water reform agreement.)

- Governments may provide compensation where, for example, reductions in reliabilities or other parameters of entitlements are abrupt or extensive, but the CoAG water reform agreement does not require them to provide compensation. Consequently, whether compensation is provided is not relevant to the assessment of compliance.

- Any constraints on the capacity to trade water rights should be based on a sound public benefit justification and minimise impacts on efficient trading.

This 2003 NCP assessment reported on governments' progress in implementing new water rights arrangements following the passage of legislation in all jurisdictions that created water rights that are separate from land title. The major implementation issues centre on progress with water management planning, the conversion of existing water allocations to new licence systems and the development of systems for registering entitlements. The Council also considered one matter remaining from the 2002 NCP assessment. New South Wales was to have established a new access licensing system (including regulations under the *Water Management Act 2000* to put in place a system for renewing access licences) and a new system for registering water rights in January 2003. The New South Wales Government deferred these measures — along with the commencement of its water sharing plans — to 1 January 2004 as a result of the Commonwealth Government foreshadowing CoAG work on a new intergovernmental agreement on water.

Provision of water to the environment

Governments are to establish a sustainable balance between the environment and other uses, including formal provisions for the environment for surface water and groundwater. In doing so, governments are to have regard for the ARMCANZ/ANZECC National Principles for the Provision of Water for Ecosystems (box 1.1).

Environmental requirements are to be determined wherever possible on the best available scientific information and governments are to have regard to the intertemporal and interspatial water needs required to maintain the health and viability of river systems and groundwater basins. For river systems that are overallocated or deemed to be stressed, governments are to provide a better balance in water resource use, including appropriate allocations to the environment to enhance/restore the health of river systems.

Governments should also consider environmental contingency allocations, with a review of allocations five years after they have been initially determined.

The 1999 tripartite meeting clarified the commitment to provide water for the environment and timeframes:

For the second tranche [1999], jurisdictions submitted individual implementation programs, outlining a priority list of river systems and/or groundwater resources, including all river systems which have been over-allocated, or are deemed to be stressed and detailed implementation actions and dates for allocations and trading to the NCC for agreement, and to Senior Officials for endorsement. This list is to be publicly available.

For the third tranche [2001], States and Territories will have to demonstrate substantial progress in implementing their agreed and endorsed implementation programs. Progress must include at least allocation to the environment in all river systems which have been over-allocated, or are deemed to be stressed.

By 2005, allocations and trading must be substantially completed for all river systems and groundwater resources identified in the agreed and endorsed individual implementation programs.

Reference: CoAG water reform agreement, clauses 4(b)–4(f); and 1999 tripartite meeting

Provision of water to the environment recognises the importance of maintaining biodiversity, addressing salinity, visually improving waterways, lakes and dams, improving habitats for fauna and flora and contributing to reduced land degradation. Achieving improved environmental outcomes is a central objective of the CoAG water reform agreement. Clause 4 of the agreement obliges governments to determine comprehensive systems of water allocations including environmental allocations for surface and groundwater resources. The 1999 tripartite meeting on water determined that progress should involve allocations for environmental purposes in all stressed and overallocated river systems by 2001. By 2005, allocations must be substantially completed for all river systems and groundwater resources identified in governments' endorsed programs.

A further outcome of the tripartite meeting was that governments, in demonstrating a sustainable balance between the environment and other uses for surface water and groundwater, should provide formal allocations for water systems consistent with the Agriculture and Resource Management Council of Australia and New Zealand/Australian and New Zealand Environment and Conservation Council (ARMCANZ/ANZECC) National Principles for the Provision of Water for Ecosystems (box 9.1). The national principles, while not the framework for decisions on water allocation, provide direction on how water management processes should deal with the issue of providing water for ecosystems. The key objective of the national principles is to sustain and, where necessary, restore ecological processes and the biodiversity of water-dependent ecosystems, recognising that adequate water flow is critical for maintaining natural ecological processes and biodiversity.

National principle 5 requires action (including reallocation) be taken to meet environmental needs where environmental water requirements cannot be met because of existing uses. Principle 4 states that the provision of water for ecosystems should go as far as possible to meeting the water regime necessary to sustain the ecological values of aquatic ecosystems while recognising the existing rights of other users. This principle thus introduces scope for socioeconomic decisions also to guide water allocations. Principle 12 requires that all relevant environmental, social and economic stakeholders be involved in water allocation planning and decision-making on environmental water provisions.

The national principles (specifically principles 4 and 5) recognise that, where there are existing users, appropriate allocations of water for consumptive and environmental purposes should be decided on the basis of full information about the ecological requirements of systems and the impacts on existing users, with the objective of ultimately achieving appropriate environmental outcomes. Integral to this is that the reference groups developing water management arrangements (and therefore determining the amount of water for extractive uses and environmental allocations) be broadly representative of the affected community. The appropriate application of the CoAG water reform agreement (incorporating the national principles) thus depends on governments ensuring that reference groups and their communities have access, wherever possible, to information on: the science-based calculation of the water requirements for sustaining ecological values; the extent of any socioeconomic trade-offs from the recommended water requirements and the rationales for the trade-offs; and the expected impact of any trade-offs on ecological values. The availability of this information (particularly an awareness of the consequences of departing from scientifically-recommended environmental flows), and access to the views of a well-informed community, mean that reference groups will be better placed to decide how much water should be provided for environmental purposes.

Obligations relating to environmental allocations were relevant in the 2003 NCP assessment for New South Wales, Victoria and Queensland — all of which have stressed or overallocated river systems. The Council considered the progress made by New South Wales and Queensland in this area in supplementary NCP assessments in 2002. Victoria provided a three-year program for improving the health of its stressed rivers in 2001. Under this program, Victoria committed to establish river health/flow rehabilitation plans for five priority river systems by 30 June 2003. Apart from assessing progress by these three jurisdictions, the Council reported on all governments' implementation of their water management arrangements against the 2005 CoAG deadline for substantial completion of allocations.

Other elements of the CoAG water reform agreement also have implications for environmental outcomes. Clauses 3(a)–(d) require water pricing regimes to be based on the principle of consumption-based pricing, thus providing a greater incentive for water conservation. Clause 3(d)(3) obliges governments to show that new rural infrastructure projects or extensions to existing schemes are ecologically sustainable before investing in those schemes. Clause 5, which seeks to facilitate water trading, recognises that trading (particularly cross-border trading) may be legitimately constrained for ecological reasons. Clause 6(c) requires that, as far as possible, the role of water industry standards-setting and regulation — including environmental regulation — be separated institutionally from businesses providing water and wastewater services. Clause 8 defines several obligations relating to the environment including the implementation of the National Water Quality Management Strategy (NWQMS) and the establishment of land care practices to protect rivers with significant environmental value.

Box 9.1: ARMCANZ/ANZECC National Principles for the Provision of Water for Ecosystems

Principle 1: River regulation and/or consumptive use should be recognised as potentially impacting on ecological values.

Principle 2: Provision of water for ecosystems should be on the basis of the best scientific information available on the water regimes necessary to sustain the ecological values of water dependent ecosystems.

Principle 3: Environmental water provisions should be legally recognised.

Principle 4: In systems where there are existing users, provision of water for ecosystems should go as far as possible to meet the water regime necessary to sustain the ecological values of aquatic ecosystems whilst recognising the existing rights of other water users.

Principle 5: Where environmental water requirements cannot be met due to existing uses, action (including reallocation) should be taken to meet environmental needs.

Principle 6: Further allocation of water for any use should only be on the basis that natural ecological processes and biodiversity are sustained (that is, ecological values are sustained).

Principle 7: Accountabilities in all aspects of management of environmental water should be transparent and clearly defined.

Principle 8: Environmental water provisions should be responsive to monitoring and improvements in understanding of environmental water requirements.

Principle 9: All water uses should be managed in a manner which recognises ecological values.

Principle 10: Appropriate demand management and water pricing strategies should be used to assist in sustaining ecological values of water resources.

Principle 11: Strategic and applied research to improve understanding of environmental water requirements is essential.

Principle 12: All relevant environmental, social and economic stakeholders will be involved in water allocation planning and decision-making on environmental water provisions.

Intrastate water trading

Water trading arrangements are to maximise water's contribution to national income and welfare, within the social, physical and ecological constraints of catchments.

Reference: CoAG water reform agreement, clause 5

The CoAG water reform agreement emphasises the importance of maximising the contribution of water to national income and welfare (within the social, physical and ecological constraints of catchments) through water trading. Where they have not already done so, governments are to implement arrangements for water trading once they have settled water entitlements. The CoAG agreement recognises a need for consistency in trading arrangements, to facilitate cross-border trading where this is possible.

In most jurisdictions, water rights may be traded temporarily (for an agreed number of seasons, including consecutive seasonal assignments) or permanently. In some jurisdictions, it is also possible to lease rights with no limit on the duration of the lease. The water management arrangements being developed under State and Territory legislation establish the quantum of tradeable volumetric allocations and set the rules governing trading.

Several implementation issues need to be resolved to achieve effective trading outcomes. The Murray–Darling Basin Commission is examining how best to manage many of these issues.

- Definitions of tradeable water rights (the commodity being traded) need to be consistent across supply systems. Where this is not possible, mechanisms such as exchange rates need to be in place to equate levels of entitlement across systems.

- Environmental clearance processes need to be robust.

- Appropriate administrative arrangements, including reliable and accessible water rights registers are necessary. Ready access to data on the price and volume of water being traded will help to develop water markets.

- Institutional and regulatory arrangements and operational decisions by licence holders (including irrigation trusts) need to facilitate trade unless there is a clear public interest argument for restricting trade.

CoAG determined that the National Competition Council should assess governments' progress with intrastate water trading in 2003 and interstate water trading in 2004. By 2005, arrangements to enable trading must be substantially in place. Some of the matters that are important for intrastate trading are also relevant for interstate trading. The Council may therefore revisit matters considered in this and previous assessments (such as consistency in registry systems) when it examines interstate trade in 2004.

Institutional reform

As far as possible, the roles of water resource management, standard setting and regulatory enforcement, and service provision are to be separated institutionally.

Service providers, in metropolitan areas in particular, are to have a commercial focus, whether achieved by contracting out, corporatisation or privatisation as determined by the relevant government. Service providers are to benchmark their performance and should seek to achieve international best practice.

Constituents are to be given greater responsibility in the management of irrigation areas, for example, through devolution of operational responsibility to local bodies, subject to appropriate regulatory frameworks being established.

Governments are to adopt an integrated approach to natural resource management practices, including:

- demonstrated administrative arrangements and decision-making processes to ensure an integrated approach to natural resource management and integrated catchment management;
- an integrated catchment approach to water resource management, including consultation with local government and the wider community in individual catchments; and
- a consideration of land care practices to protect rivers with high environmental values.

Reference: CoAG water reform agreement, clause 6

Governments should, at a minimum, separate the responsibility for the provision of water and wastewater services from the responsibility for regulation, water resource and environmental management and standards-setting in areas such as health and plumbing. The separation of roles is intended to remove the potential for conflicts of interest, which might arise if, for example, a monopoly water business (or its Minister) has responsibility both for providing water and determining the price and quality of that water. Independent economic regulation is appropriate, given water and wastewater businesses are public monopolies. Independent economic regulation, where the regulator recommends on prices taking account of the CoAG pricing principles and provides its recommendations in a public report, also addresses pricing obligations. If water businesses are too small to justify full monitoring (as is often the case for local government businesses), then there should at least be transparency and accountability in the setting and reporting of prices and service standards. The CoAG agreement does not rule out a water industry regulator and a service provider being responsible to the same Minister, but the relevant government must adequately address potential conflicts of interest in such cases.

The devolution of irrigation scheme management to local bodies can take different forms, ranging from the scheme manager's consultation with local constituents on irrigation management issues to the devolution of operational responsibility to the local level, although the obligation does not require governments to go that far. Any devolution of operational responsibility should occur within an appropriate regulatory framework.

The focus of integrated catchment management is the establishment of institutional arrangements to manage the sustainable use of land and water resources. Catchment management addresses problems such as salinity, river degradation and pollution, biodiversity loss and soil degradation — which threaten agriculture, rural communities, urban communities and other environmental assets. Institutional arrangements best have a statutory underpinning and incorporate mechanisms for effective stakeholder participation. Catchment management should be implemented via partnerships among the different levels of government and nongovernment organisations. Relevant approaches include regional strategies developed under bilateral agreements between the Commonwealth, State and Territory governments on the National Action Plan for Salinity and Water Quality and the Natural Heritage Trust extension.

The requirement to benchmark businesses' performance and the objective that businesses seek to achieve international best practice aim at ensuring that water services are delivered as efficiently as possible. Consistent with this, and with the pricing reforms that seek to ensure water and wastewater businesses earn sufficient revenue to maintain and refurbish their infrastructure, services in metropolitan areas must have a commercial focus. It is up to each State and Territory government to determine how its businesses achieve a commercial focus, whether by contracting out, corporatisation or privatisation.

National Water Quality Management Strategy

Governments are to support ANZECC and ARMCANZ in developing the National Water Quality Management Strategy, by adopting market-based and regulatory measures, water quality monitoring, catchment management policies, town wastewater and sewage disposal measures, and community consultation and awareness.

Governments are to demonstrate a high level of political commitment and a jurisdictional response to the ongoing implementation of the principles contained in the National Water Quality Management Strategy guidelines, including on-the-ground action to achieving the policy objectives.

Reference: CoAG water reform agreement, clauses 8(b) and 8(d)

The National Water Quality Management Strategy (NWQMS) is a response to community concern about the condition of the nation's water. The policy objective is to achieve sustainable use of Australia's water resources by protecting their quality, while maintaining economic and social development. The strategy incorporates a full mix of approaches including, but not limited to, regulatory and market based approaches, education and guidance. It is based on principles of ecologically sustainable development, an integrated approach to water quality management and community involvement in setting water quality objectives. The strategy requires each government to adopt an overarching water quality management plan, supported by endorsed objectives for particular water bodies, catchments or uses.

The NWQMS comprises 21 guidelines for delivering a nationally consistent approach to water quality management. The guidelines have a shared national objective but offer governments the flexibility to respond differently to circumstances at regional and local levels. In particular, developments in integrated resource management (for example, through the National Action Plan for Salinity and Water Quality and the Natural Heritage Trust extension) have enhanced the original NWQMS guidelines.

The Commonwealth Government, after consulting with the States and Territories, proposed a two-yearly review to assess the implementation of the NWQMS guidelines. The Council indicated in the 2001 NCP assessment that it would look in subsequent assessments for governments to show how they have adopted the NWQMS guidelines. Because the two-year timeframe expired in 2003, the Council expected State and Territory governments to have largely implemented the NWQMS by this NCP assessment.

The process for water quality management is described in the NWQMS Implementation Guidelines (1998), the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000) and the Australian Guidelines for Water Quality Monitoring and Reporting (2000). While flexible, the following key elements should be implemented.

- There should be active consultation and engagement with the community in setting the environmental values of water, determining water quality objectives and undertaking management actions, including water quality monitoring.

- Environmental values (values of water use for aquatic ecosystems, primary industries, recreation, aesthetics and drinking) of water resources (freshwater, groundwater, marine water and estuarine water) should be identified. Values should be reported according to the scale (the State, regional or local level) at which they have been determined through public consultation. Governments should detail processes and mechanisms for identifying and amending environmental values, and describe the extent to which they have been implemented.

- Water quality and quantity issues that threaten environmental values should be identified and reported. Governments should detail the mechanisms or processes for identifying and reporting water quality and quantity issues in the context of identified environmental values.

- Water quality objectives and environmental water provisions to protect the declared environmental values should be identified and implemented. Water quality and quantity issues are intrinsically linked. Altered flow regimes cause or exacerbate many water quality problems, so integrated management is required.

- Management actions to achieve water quality objectives should be identified and implemented. Governments should describe the extent to which management actions attain and protect environmental values, water quality objectives and environmental flow provisions and their status (for example, drafted, gazetted, reviewed). Examples of management actions include protocols for environmental impact assessment, environmental protection policies, load-based licensing, codes of practice, pollution offset programs and catchment management plans and policies.

- Monitoring programs to review and refine water quality objectives, identify the sources of pollution and evaluate the effectiveness of management actions in meeting water quality objectives should be designed and implemented. The programs should include the role of community water quality monitoring.

- There should be public processes for periodic independent auditing and reporting on the effectiveness of actions to achieve water quality objectives and protect environmental values.

- There should be systematic/mainstream application of relevant national guidelines (for example, application for stormwater and sewage systems).

Water industry legislation review and reform

As well as implementing the CoAG water reform agreement, governments are to review and, where appropriate, reform water industry legislation that restricts competition. In accord with the Competition Principles Agreement, governments must ensure that existing and new legislation does not restrict competition unless:

- the benefits of the restriction to the community as a whole outweigh the costs; and
- the objectives of the legislation can be achieved only by restricting competition.

Reference: Competition Principles Agreement, clause 5

Governments had to review and, where appropriate, reform all legislation that restricts competition that existed at June 1996 by 30 June 2002. Reform is appropriate where competition restrictions do not provide a net benefit to the whole community and are not necessary to achieve the objective of the legislation. Any new legislation that restricts competition must also meet this test.

Completion of review and appropriate reform obligations is a key element of the 2003 NCP assessment. Where review and reform implementation was not complete (or a firm transitional path to reform that is in the public interest was not in place) at 30 June 2003, the Council assessed the relevant jurisdiction as having not complied with its legislation review and reform obligation. The Council considered water industry legislation review and reform activity by each jurisdiction, focusing on activity that was still to be completed at the time of the 2002 NCP assessment. Appendix B in volume 3 of this 2003 NCP assessment report summarises the status of water legislation review and reform activity by all jurisdictions at 30 June 2003.

New rural water infrastructure

Investments in new rural water schemes or extensions to existing rural schemes are to be undertaken only after appraisal indicates that the scheme/extension is economically viable and ecologically sustainable.

Reference: CoAG water reform agreement, clause 3(d)(3)

In the past, it was not uncommon for governments to invest in new water infrastructure without appropriate justification. Capital subsidies encouraged investment in noneconomic facilities and overengineering of systems, with adverse economic and fiscal outcomes. Subsidies also encouraged fragmentation, for example where their availability encouraged smaller communities to develop their own facility rather than seek to obtain services from nearby larger authorities. Also, there was often insufficient regard to environmental outcomes.

The CoAG water reform agreement seeks to ensure investment in water infrastructure is justified by requiring that all new investments in rural water schemes or extensions to existing schemes be undertaken only if they are shown, prior to construction commencing, to be economically viable and ecologically sustainable. The Council considers evidence on economic viability where governments contribute funds to a project. It considers evidence on ecological sustainability for all new rural projects, including private investments.

The Council found in previous NCP assessments that State and Territory government mechanisms for appraising the economic and ecological aspects of new schemes are generally satisfactory. Governments' processes appear to provide for appropriate independence, public consultation and scrutiny, and have enough flexibility to match the depth of analysis with the size and significance of the project. The Council's task of assessing compliance involves considering whether governments are applying approval processes appropriately, so new infrastructure decisions are based on robust economic and environmental assessments.

For evidence of economic viability, the Council looks for governments to have analysed relevant economic and social costs and benefits, including any costs of mitigating adverse environmental effects resulting from the new scheme.[1] For large developments, a robust cost–benefit analysis is an effective way of meeting the CoAG obligation. Appraisals should be based on the best information available, with any assumptions and limitations clearly stated. For appraisals of ecological sustainability, the Council looks for information on the nature of the assessment and decision-making processes as well as mechanisms to monitor the impacts of the development and its compliance with environmental standards. The Council considered economic and ecological evidence on the following three projects in this 2003 NCP assessment.

- The Burnett Water Infrastructure Project in Queensland is a proposal for the construction of the 300-gigalitre Burnett River Dam (previously referred to as the Paradise Dam), Eidsvold Weir and Barlil Weir, and the raising of Jones Weir and Ned Churchward (formerly Walla) Weir. The capital cost of the project is estimated at around A$210 million.

[1] Economic viability assessments should discount cash flows using an appropriate discount rate such as a project specific weighted average cost of capital.

- The Clare Valley Water Supply Scheme in South Australia involves the construction of 83 kilometres of new pipeline, two pumping stations and a 4-megalitre water storage to transfer up to 7.3 gigalitres per year of filtered and treated River Murray water to the Clare Valley. The water will be used to improve the reticulated supply of high quality water to several townships, to augment supplies to the Mid-North region, and to supply water to the Clare Valley region for irrigation and bulk water purposes. While initially expected to be a private sector project, the project proceeded as a SA Water project. It is expected to be completed in November 2003.

- The Meander Dam Project in Tasmania is a proposal for the construction of a 43-gigalitre dam on the Meander River to supply licensed water users including irrigation, town domestic water supplies, and a proposed mini hydroelectric power plant, and to provide environmental flow requirements for the Meander River.

Public education and consultation

Governments are to consult on the significant CoAG reforms (especially water pricing and cost recovery for urban and rural services, water allocations and trade in water entitlements). They should implement education programs on the benefits of reform.

Reference: CoAG water reform agreement, clauses 7(a)–7(e)

CoAG recognises the importance of governments consulting on water reform and involving the community in taking decisions on policy, and putting in place educational programs that show the benefits of reform. Wide consultation and community involvement produces more and better information on which to base decisions. Decisions that are consensus driven are more likely to satisfy stakeholders, and a community that is better informed about water issues and their importance is much more likely to accept change.

The Council assesses governments' performances against public education and consultation obligations each year, focusing on the areas of reform that are due for assessment. Consequently, for the 2003 NCP assessment, the Council considered governments' public education and consultation activity concerning urban pricing, water management planning (including allocations to the environment), institutional reform, intrastate water trading, integrated catchment management and water quality commitments relating to the NWQMS.

Reform progress

The remainder of this chapter summarises the progress that each State and Territory made in implementing the CoAG water reform agreement and provides a brief overview of work by the Murray–Darling Basin Commission, focusing on the reforms scheduled for assessment in 2003. Volume 3 of the Council's 2003 NCP assessment report contains a detailed discussion of each State and Territory's water reform activity and the Council's 2003 assessment of each State and Territory's performance in implementing the water reform agreement. Volume 3 also discusses relevant work by the Murray–Darling Basin Commission.

New South Wales

Urban water and wastewater pricing

The four metropolitan urban water and wastewater service businesses — the Sydney Water Corporation, the Hunter Water Corporation, the Gosford City Council and the Wyong Shire Council — all set prices on a consumption basis to achieve full cost recovery (the Sydney Water Corporation will eliminate its few remaining property-based charges by June 2005). The Sydney Catchment Authority, which owns the headworks infrastructure and supplies bulk water to the Sydney Water Corporation, also sets prices to achieve full cost recovery. The Independent Pricing and Regulatory Tribunal (IPART) regulates the prices of services provided by the four urban businesses and the Sydney Catchment Authority. The current IPART price determinations for the urban metropolitan businesses and the Sydney Catchment Authority apply to 30 June 2005.

Except for Gosford and Wyong, which do not apply taxes or tax equivalents, prices for urban metropolitan water and wastewater services include all components for viability identified in the CoAG pricing principles. New South Wales legislated during 2003 to require all local government businesses to make tax equivalent payments. New South Wales anticipated that the next price path for the Gosford and Wyong water and wastewater businesses will incorporate tax equivalents.

New South Wales has 87 nonmetropolitan urban local government water and wastewater utilities with more than 1000 connected properties. About three-quarters of these utilities set prices that achieved full cost recovery in 2001-02. The utilities that are yet to achieve full cost recovery are relatively small, and collectively represent about 3 per cent of all property connections held by utilities with more than 1000 connections. About 70 per cent of water utilities with more than 1000 connections apply consumption-based pricing.

Some of those yet to introduce fully consumption-based pricing impose an access charge and free water allowance, with a use-based charge for excess water consumption. These arrangements may approximate consumption-based pricing if the free water allowance is limited to the quantity needed to meet public health requirements and if there is an appropriate charge for discretionary use above the allowance. Several utilities are reducing their free water allowances. Although some still provide relatively high allowances, these utilities represent only a small proportion of the total number of water connections in the State.

New South Wales issued best practice pricing guidelines in February 2003, which will assist the remaining utilities to move to full cost recovery and adopt consumption-based pricing. In addition, the *Local Government Amendment (National Competition Policy) Review Act 2003* introduced best practice management guidelines for water and wastewater utilities. The management guidelines incorporate arrangements that increase the incentive for utilities to price appropriately. New South Wales anticipates an increased number of utilities to fully recover costs in 2003-04 as a result of the best practice pricing and management guidelines.

Water entitlements: access licences and the register of entitlements

At the time of the 2002 NCP assessment, New South Wales was converting its system of five-year licences under the *Water Act 1912* to a new system of 15-year access licences under the *Water Management Act 2000*. The Government was giving priority to converting licences for water sources covered by its first round of water sharing plans (which cover about 80 per cent of the State's water). Regulations under the Water Management Act define the arrangements for licence renewals. The Regulations give priority to existing licence holders, with licences expected to be renewed subject to standard environmental assessments. New South Wales was also working on a system for registering water rights at the time of the 2002 NCP assessment. The register is intended to give licence holders certainty in their right to water, such that access licences can be used as mortgage security in the same way that property can.

The new licensing and approvals system and the register were to be operational by January 2003. Following the Deputy Prime Minister's announcement on 4 June 2003 foreshadowing a new intergovernmental agreement on water, New South Wales deferred the application of its water management arrangements, including the commencement date for the new licensing system and registry, to 1 January 2004.

Provision of water to the environment in stressed and overallocated systems

New South Wales gazetted water sharing plans for 35 surface water and groundwater systems, which provide allocations of water for environmental purposes. The plans are due to commence on 1 January 2004, following the New South Wales Government's decision to defer the plans' commencement by six months to accommodate CoAG work on water industry matters. This work may alter the approach to some areas of the 1994 CoAG water agreement, including the allocation of water to the environment (which is a matter covered by the New South Wales water sharing plans).

Several aspects of the water sharing process in New South Wales suggest the likelihood of better environmental outcomes than are available under pre-existing processes. The plans allocate water for extractive and environmental purposes, and so recognise the environment as a legitimate user of water. For the unregulated rivers, the plans provide the first formal allocation of water to the environment. The plans were developed by water management committees, which had access to a range of scientific and other information, via an extensive public process. The plans incorporate processes for monitoring environmental outcomes and make provision for increasing the amount of water for the environment if monitoring outcomes indicate this is warranted. New South Wales published summary guides and fact sheets that provide information on the plans for licence holders and the wider community. The Government advised that it also intends to provide more detailed information on the environmental benefits of its water sharing plans.

Intrastate trade in water

The New South Wales Government's gazetted water sharing plans and the Statewide access licence dealing principles will govern water trading in the State. The Government's decision to defer commencement of the gazetted water sharing plans and the new registry system until 1 January 2004 will delay the commencement of water trading under the new arrangements. Trading will occur in the interim under the Water Act.

The new arrangements provide greater scope for water trading than those previously in place. The trading rules in the water sharing plans contain restrictions on water trading, however, some of which appear to be related to objectives other than environmental protection or the practical management of trading systems. There are also some remaining prohibitions on trade out of some irrigation districts.

Institutional reform

Structural separation

New South Wales transferred responsibility for State Water, previously a ring-fenced business unit within the (former) Department of Land and Water Conservation, to the Ministry of Energy and Utilities. This separation, which followed consultation with water users, clearly distinguishes between the manager of built assets and the natural resource regulator. IPART has responsibility for price regulation of the four urban water and wastewater service providers, the Sydney Catchment Authority and State Water. New South Wales annually benchmarks the performance of its nonmetropolitan urban water and wastewater providers, which enables customers to compare the standard of service of the different providers.

Integrated catchment management

New South Wales continued to make progress in implementing its integrated catchment management obligations. The principal achievement since the 2001 NCP assessment is the development of 21 catchment blueprints covering the whole of the State. Other developments include: improved coordination of natural resource management; bilateral agreements on the National Action Plan for Salinity and Water Quality and the Natural Heritage Trust extension with the Commonwealth Government; ongoing work by the Healthy Rivers Commission; and the Wentworth Group Report into land clearing and catchment-related issues.

National Water Quality Management Strategy

New South Wales continued to make progress in implementing the NWQMS framework. Significant developments since 2001 include:

- the development of long-term environmental objectives by the Healthy Rivers Commission for a number of river systems, drawing on NWQMS guidelines;
- the release of an Environment Protection Authority consultation paper on marine water quality objectives, drawing on NWQMS guidelines;
- the establishment of the State Water Management Outcomes Plan to set overarching policy contexts, targets and strategic outcomes for water resources, with regard to NWQMS requirements;
- the incorporation of water quality initiatives in water sharing plans;

- the release of an interim approach to reviewing, coordinating and streamlining water monitoring arrangements;
- the development of new water quality benchmarks in accord with NWQMS methods;
- ongoing work on market-based measures to improve water quality; and
- the extended funding of stormwater management programs.

Legislation review and reform

The New South Wales Water Management Act repealed a range of water industry legislation. (New South Wales's schedule of legislation review and reform activity lists 18 Acts that have been repealed.) The Water Management Act considerably improves the arrangements for water management (including water trading) in the State. The provisions in the Water Management Act relating to water licensing and trading, as well as the first round of water sharing plans, are scheduled to commence on 1 January 2004.

Public education and consultation

Public education and consultation activity by New South Wales in 2002-03 concerned the development and implementation of water sharing arrangements, integrated catchment management activity, water and wastewater pricing, and structural reform matters.

New South Wales developed its State Water Management Outcomes Plan providing overarching State water management targets and its first round of water sharing plans via public processes. Preparation of the water sharing plans involved the release of draft plans for public consultation, and the water management committees considering public submissions prior to finalising their recommendations on water sharing arrangements.

Some stakeholders involved in developing the first round of draft water sharing plans commented adversely on a range of matters, including the timing of the release of the interim State Water Management Outcomes Plan, delays in the availability of advisory notes and delays in finalising the plan. Some water management committees also raised concerns with the timing of the release of key sources of technical and scientific information. New South Wales undertook to monitor future processes for developing water sharing plans to ensure that similar problems do not arise. The Government noted that the gazettal of the State Water Management Outcomes Plan and the experience gained from developing the first round of water sharing plans will help to inform the process for future plans. New South Wales published summary guides and fact sheets on almost all of its completed water sharing plans. These provide an overview of the main elements of each of the plans, including their environmental water provisions.

New South Wales has 21 catchment blueprints establishing specific and measurable catchment targets covering biodiversity, water quality and flow, salinity, riverine ecosystems, soil health and native vegetation. The blueprints were drafted by catchment management boards and were endorsed by the New South Wales Government in 2002 following public consultation. All blueprints are public documents.

Independent economic regulation of the four urban metropolitan service providers, the Sydney Catchment Authority and State Water assists public understanding of the cause-and-effect relationship between infrastructure performance and standards of service and related costs. Similarly, the Government's best practice pricing guidelines and management guidelines for local water and wastewater utilities, and its conduct of information seminars, should assist public understanding of this element of water reform. Before transferring responsibility for State Water from the (former) Department of Land and Water Conservation to the Ministry of Energy and Utilities, New South Wales consulted with water users.

Victoria

Urban water and wastewater pricing

There are four urban metropolitan providers of water and wastewater services in Melbourne. Melbourne Water is the wholesaler providing bulk water supply, sewerage treatment, drainage, and floodplain management services to the three retail service providers. These are City West Water, South East Water and Yarra Valley Water. Outside of metropolitan Melbourne, there are 15 regional urban water authorities providing services to country towns. There are some two million property connections in Victoria, of which about 30 per cent are supplied by the regional urban authorities.

Victoria's 2001 price review of water, sewerage and drainage services established a three-year price determination for these services (including regional urban services) from 1 July 2001 to 30 June 2004. The review sought to establish prices that would fall between a floor price that ensures commercial viability and a ceiling price that avoids monopoly rents, consistent with CoAG pricing principles. Victoria's cost recovery estimates indicate that all regional urban water authorities achieved at least the floor price for full cost recovery in 2002-03. Victoria's widespread adoption of volumetric charges as part of a two-part tariff and the absence of free water allowances ensures that water users across the State have a strong incentive to use water efficiently.

The Victorian Government is canvassing structural and pricing issues in a green paper review of the State's water industry. In addition, Victoria will bring the water industry under the jurisdiction of the Essential Services Commission from 1 January 2004, with the commission's first price determination for water to take effect on 1 July 2005.

Water entitlements

Under the *Water Act 1989*, bulk entitlements are issued to rural and urban water authorities and are a legal entitlement to water. Bulk entitlements define the amount of water that an authority may take from a river or storage, the rate at which it may be taken and the reliability of the entitlement. They are granted to rural water authorities for the regulated river systems and to urban authorities irrespective of whether they are supplied by regulated or unregulated rivers.

In the regulated irrigation districts, bulk entitlements are issued to the rural water authorities as the basis for providing water to irrigators. Irrigators who pump directly from rivers require a licence to take and use water. Individual water rights in the irrigation districts are listed in a schedule to the bulk entitlement. In the unregulated river systems, water rights are provided through licences that allow the holder to divert water. In water supply protection areas, diversions are managed via streamflow management plans, which are being developed on a priority needs basis. Streamflow management plans include rules covering the granting of new water licences and flow sharing (including environmental flows) under a range of flow conditions. Lower priority rivers are subject to Statewide management rules rather than a formal plan. Licences are required to extract groundwater. Where water allocations exceed 70 per cent of the sustainable yield of an aquifer, a groundwater supply protection area is established and a groundwater management plan developed.

Bulk entitlements now cover approximately 85 per cent of the State's total water resources. Victoria expected to complete the conversions for all major systems (except the Loddon River and possibly Melbourne) by the end of 2003, and to grant all bulk entitlements by the end of 2004. For the unregulated rivers, three streamflow management plans were completed at March 2003, a further 28 were in progress and 11 were still to commence. Of the 28 plans in progress, Victoria expected to complete 10 by late 2003 and virtually all of the remaining plans by June 2004. For groundwater sources, the Government had established 18 water supply protection areas by March 2003, and was seeking declaration for a further four areas. Victoria had approved seven groundwater management plans by March 2003, and expected to submit a further seven plans for approval by mid-2003. Initial meetings of consultative committees were being held in the remaining four areas.

The Department of Sustainability and Environment maintains a register of bulk entitlements, which is publicly available. Rural water authorities are required to maintain registers of water entitlements in irrigation districts and licences for diversions from unregulated rivers. Third party interests can be noted on the registers.

Provision of water to the environment

Victoria progressed its flow rehabilitation strategies for the Thomson, Macalister, Maribyrnong and Lerderderg rivers and Badger Creek — five of the State's stressed river systems. Victoria has completed flow rehabilitation plans for two of these systems (the Maribyrnong and Lerderderg rivers) and determined a course of action for Badger Creek. The Government anticipated that flow rehabilitation plans for the Thomson and Macalister rivers would soon be completed.

Victoria committed funding to modify the Lerderderg Weir to enable it to pass fresher and flushing flows. For Badger Creek, the Government proposes to connect Healesville to an alternative water supply, which it has scheduled for 2012. As an interim measure, Melbourne Water committed funding to undertake works to improve the health of Badger Creek. Victoria decided not to implement the flow rehabilitation plan for the Maribyrnong River, considering that the Statewide return in terms of environmental outcomes from flow restoration activities would be greater for other rivers. While noting that the recommended environmental flows are provided in most reaches of the river, Victoria considers that there is a need (as identified in the plan) for additional information before it commits funds to restoring flows in all reaches. The Government referred the Maribyrnong plan to the Port Phillip and Westernport Catchment Management Authority to incorporate specific actions to improve river health into its regional catchment strategy and river health planning processes. Instead of implementing the Maribrynong plan, Victoria will implement a streamflow management plan for the King Parrot Creek. Victoria indicated that this plan provides a greater environmental outcome than the Maribyrnong plan for the level of commitment required.

Victoria established a technical audit panel to consider whether the information and method used in the development of environmental flows are the best available at the time, and whether the assessment of risks is properly done. The audit panel's reviews will be made public. Victoria also produced guidelines for the preparation of streamflow and groundwater management plans, which require reference committees to obtain comments from the technical audit panel, including comments on the risks to the environment of the committee's recommended flow regime. The draft plan must incorporate the comments before it is made available for public comment. In addition, the Department of Sustainability and Environment makes environmental flow assessments and related documentation available in its library and on the Internet.

Intrastate trade in water

Victoria has a well-established trading market for high security water, and trading plays an important role in the State's agricultural production. The Water Act and associated Regulations provide the basis for water trading within the State. The bulk of water trade (94 per cent in 1999-2000) takes place among irrigators in regulated systems. Unregulated systems account for only around 5 per cent of total water entitlements, and trade is correspondingly smaller. Almost 90 per cent of all permanent trade occurs in the large regulated systems in northern Victoria.

Water rights in Victoria are sufficiently specified to allow for efficient trade. While Victoria's registry arrangements do not provide indefeasibility or surety of title, third parties can register an interest in a water right. Trades may not be approved without the agreement of these third parties. Trading arrangements contain measures to protect the water rights of other users and the environment.

Adding to the scope for private trades and the use of brokers, Victoria extended the operations of its water exchange, Watermove, to temporary transfers throughout the State and to and from southern New South Wales. Victoria is considering options for the leasing of water. It also significantly improved the transparency of its trading arrangements. Victoria continued to progress the conversion of the existing rights of water authorities to clearly defined bulk entitlements, and outside the irrigation districts is specifying water entitlements in streamflow and groundwater management plans. Victoria is reviewing two of the remaining constraints on water trading — (1) the requirement for water entitlements to attach to land and (2) the differential returns on bulk water supply — as part of its green paper review of the water industry.

Institutional reform

Structural separation

Victoria will bring the water industry under the economic jurisdiction of the Essential Services Commission from 1 January 2004. Victoria also intends to develop obligations statements for its Melbourne metropolitan, regional urban and rural water businesses to clearly and formally articulate the businesses' obligations. It expects to issue the statements (which will be publicly available) by March 2004.

Devolution of irrigation scheme management

Rural customer consultative committees will continue to provide input to determining pricing proposals and service level requirements for the rural water authorities after the water industry is brought under the economic jurisdiction of the Essential Services Commission. Victoria indicated that it is committed to strengthening the committees and more effectively involving the broader customer base, to increase the transparency of negotiations on service levels and prices.

Integrated catchment management

Since the 2001 NCP assessment, Victoria has focused on reforming its administrative framework and reviewing regional catchment strategies. These initiatives are interrelated, and aim to ensure that integrated catchment management is administered in accord with the requirements of the National Action Plan for Salinity and Water Quality and the Natural Heritage Trust extension.

Victoria has in place, via its Victorian River Health Strategy, a means of coordinating the management of river health issues, including water quality and quantity issues. The strategy has been designed to align with the catchment management authority/regional catchment strategy framework, and reflects the administrative approaches and management processes required under the national action plan. Victoria's natural resource management framework facilitates consideration of, and support for, land care practices to protect rivers with high environmental values. In particular, Victoria's action plan for second generation land care (released in 2002) sets directions for the next 15 years.

Catchment management authorities face the concurrent and interrelated tasks of revising their regional catchment strategies and developing river health strategies. Moreover, they are developing strategies against evolving national and state policy contexts, including the national action plan and Natural Heritage Trust extension. This has meant some delay in Victoria's review and renewal of regional catchment strategies against the State's original milestones.

National Water Quality Management Strategy

Victoria is implementing the NWQMS framework via regional catchment strategies, river health strategies and action plans covering water quality, water quality monitoring and wastewater and effluent management at the regional level. Significant developments since the 2001 NCP assessment, some of which are still under way, include:

- policy development in frameworks for setting regional water quality and river health targets through the Victorian River Health Strategy, with NWQMS guidelines used as input in the development of targets;
- the proposed incorporation of risk-based environmental quality objectives, derived from objectives set out in the NWQMS;
- the development of an assets register, drawing in part on environmental values in the NWQMS;
- the completion of the Catchment Condition Indicators project, and its publication on a web site; and
- the introduction of the Safe Drinking Water Bill in April 2003 and the proposed introduction of new regulatory measures and drinking water quality standards based on NWQMS guidelines.

Legislation review and reform

Victoria commissioned an independent review of the State's water legislation and associated regulations in 1999. The review examined the Water Act, *Water Industry Act 1994*, the *Melbourne and Metropolitan Board of Works Act 1958* and the *Melbourne Water Corporation Act 1992* and associated subordinate legislation to identify all the key competitive restrictions in the provision of water and sewerage services. The review was undertaken via an extensive public process.

The review considered and recommended on: restrictions on the ability of the three urban retail water and sewerage licensees and authorities to perform functions and/or act outside defined areas; provisions relating to the allocation and trading of water entitlements; the powers of authorities and licensees, including the power to require connection to the sewerage system; the arrangements and criteria for issuing licences and permits; and consistency in legislation and regulation. The Government accepted the majority of the recommendations and work to progress implementation is under way.

Key outcomes include: the introduction of legislation to give effect to the economic regulation of the water industry by the Essential Services Commission; the release for public comment of legislative proposals to allow leasing of water entitlements; the canvassing of options for managing structural change; a commitment to review the requirement to own land as a condition of owning a licence; a commitment to review the differential rate of return on bulk water supplies before the Essential Services Commission sets prices for bulk water; and a commitment to develop a Statewide legislative framework, to be informed by the findings of the green paper review of the water industry.

Public education and consultation

Victoria undertakes public education and consultation through public programs on major reform issues.

- The Government consults with the community and stakeholders in developing and implementing bulk entitlements, streamflow management plans, groundwater management plans, and river health plans and other natural resource management programs.

- The renewal of Victoria's regional catchment strategies involved considerable consultation with regional communities.

- The State's review of water industry legislation involved an extensive public process.

- The urban water businesses have customer consultation obligations via operating licences and water services agreements. Rural water authorities engage with their customers via water services committees.

- The Victorian Farm Dams (Irrigation) Review Committee held a series of public meetings and public hearings across the State. A discussion paper was released for comment and the submissions considered by the review committee.

- Legislative proposals to establish the arrangements for a Statewide drinking water quality framework were established following a consultation process involving the release of a proposals paper and a discussion paper and consideration of submissions from interested parties.

- The consultation process to develop arrangements to establish the Essential Services Commission included the release of an issues paper and a proposals paper for public comment.

- The Government adopted the Melbourne Water Resources Strategy with the objective of raising general awareness and understanding within the Melbourne area community of the need to change prevailing attitudes to water. The strategy aims at achieving the sustainable management of greater Melbourne's water resources over the next 50 years. The Government is also taking steps to raise community awareness of the need to conserve water supplies. The Victorian Water Industry Association is assisting in making educational material regarding water available to Victorian schools by cataloguing information developed and held by Victorian water businesses.

Queensland

Urban water and wastewater pricing

The water and sewerage businesses of Queensland's 18 largest local governments are required under the *Local Government Act 1993* to achieve full cost-recovery. They must also apply consumption-based pricing unless they can show that this would not be cost-effective. The Queensland Government does not require the water and sewerage businesses of the other 106 local governments to implement the pricing reforms, although the Government encourages implementation via NCP financial incentives for local governments that implement reform and via its Business Management Assistance Program.

All but one of the 18 largest businesses and all 11 of those with more than 5000 connections (apart from the 18 largest) achieved full cost recovery in 2001-02. There were preliminary figures only for Thuringowa City Council, the one exception among the 18 largest local governments. Some 50 of the 68 businesses with over 1000 connections achieved full cost recovery in 2001-02, and another 11 recovered most costs

Implementation of consumption-based pricing for water services is well advanced. Of the 18 largest businesses, 15 have implemented use-based pricing and two are proposing to do so by 2004-05. Townsville City Council has not implemented consumption-based pricing arrangements, but there is now a sufficiently robust case that this would not be cost-effective at the present time. Nine of the 11 local government businesses with more than 5000 connections (apart from the 18 largest) price on a consumption basis, and one has shown that introducing use-based pricing would not be cost-effective. Some 22 of the 39 businesses with 1000–5000 connections price their water service on a consumption basis, with a further eight proposing to do so, undertaking a cost-effectiveness study or operating a pricing regime with some use-based elements. Some 28 local governments in urban and regional areas apply a use-based trade waste charge, including all but three of the 18 largest local government service providers.

Water entitlements

Under Queensland's *Water Act 2000*, water resource plans specify the rules for the allocation of water, water allocation security objectives and environmental flow provisions. The plans, which have effect for 10 years, are implemented through resource operations plans detailing day-to-day operational rules. Infrastructure operators must hold a resource operations licence and comply with the relevant resource operations plan.

Once a resource operations plan is approved, water licences under the previous system are converted to water allocations. A water allocation is an authority to take water in accordance with a water resource plan and resource operations plan. Water allocations are separate from land title and are clearly specified in terms of ownership, volume and location. A water allocations register records details of all water allocations and the corresponding interests and dealings. Compensation is payable under the Water Act if allocations are changed during the 10-year life of a water resource plan in a way that reduces their market value.

The Queensland Government intends to develop water resource plans and resource operations plans for all of its major water resources. It completed water resource plans for six river systems and expects a further three to be completed soon. At May 2003, it had completed one resource operations plan — for the Burnett Basin. The State's most recent timetable for completing its water resource and resource operations plans indicates that some plans are not scheduled to be completed until after 2005.

Provision of water to the environment

In the 2002 NCP assessment, the Queensland Government announced an independent scientific review of the assessment of the current and future condition of the Lower Balonne River system and committed to act on the recommendations of the review. The scientific review reported in February 2003, finding that the Lower Balonne system is in a reasonable ecological condition but may be overallocated. The review recommended arrangements for wetting national parks and wetlands within the system and proposed further research to refine environmental flow requirements. The Queensland Government is developing new water management arrangements for the Condamine–Balonne Basin. It anticipates that the water resource plan and the resource operations plan that will implement the water resource plan will be finalised by mid-2004.

The Burnett Basin resource operations plan finalised in May 2003 reserves allocations of water to be made available via the proposed Burnett Water Infrastructure Project. The plan will require amendment (once the detailed design of the infrastructure is known) to allow for the release of the water. Under the plan, this amendment can be made without the usual public consultation process. The resource operations plan specifies, however, that amendments to accommodate the new infrastructure cannot be made until it is demonstrated that the supply of water would not have an impact on the water allocation security and environmental flow objectives in the water resource plan. Queensland advised that it will consult with water users prior to any amendment to the resource operations plan to accommodate the design of the new infrastructure.

Intrastate trade in water

Queensland is in the early stages of permanent water trading. A trial of permanent trading commenced in the Mareeba Dimbulah scheme in 1999 and was extended to a small proportion of the water allocated in the Nogoa McKenzie scheme and to the lower parts of the Mary River scheme. At May 2003, Queensland had finalised one resource operations plan. Final resource operations plans are necessary to enable permanent trading (outside areas covered by the trading trial) and to define the water trading rules. Queensland's revised timetable for developing its resource operations plans indicates that plans for several basins will not be completed until after 2005.

Several provisions in Queensland's interim arrangements for permanent trades under the trading trial in the Mareeba Dimbulah, lower Mary River and Nogoa McKenzie schemes are inconsistent with the CoAG water trading obligations. In particular, an interim water allocation must be re-attached to land and the water transferred must be used for primary production or stock and domestic purposes. These are interim arrangements, however, pending finalisation of the relevant resource operations plans. The trading rules in the Burnett Basin resource operations plan appear to facilitate trading, with restrictions in the plan reflecting environmental and physical constraints.

Institutional reform

Queensland has implemented water reform requirements to structurally separate water institutions, ensure that service delivery organisations in metropolitan areas have a commercial focus, ensure that service providers implement performance monitoring arrangements, and devolve a greater degree of responsibility for the management of irrigation areas to local constituents.

Queensland's major remaining institutional reform obligation relates to integrated catchment management. Queensland's recent focus appears to have been on revising the administrative framework to implement integrated catchment management in accord with the requirements of the National Action Plan for Salinity and Water Quality and the Natural Heritage Trust extension. Under the new arrangements, 14 regional bodies will develop and implement regional natural resource management plans, drawing on the work previously undertaken by catchment committees and regional strategy groups, and covering the whole of the State. Queensland's natural resource management framework — including, for example, land care initiatives to reduce broadacre clearing of remnant vegetation — appears to account for the protection of rivers with significant environmental values.

National Water Quality Management Strategy

Queensland continues to make progress in implementing the NWQMS framework. Developments since the 2001 NCP assessment, some of which are still in train, include:

- progress towards developing environmental values, based on NWQMS methods, for several major river systems;
- measures to improve water quality monitoring and information dissemination;

- implementation of NWQMS principles in the South East Queensland Regional Water Quality Management Strategy; and
- a review of drinking water quality arrangements to align with the NWQMS guidelines.

The State continues to refine the Queensland Water Quality Guidelines and expects to publish draft guidelines by the end of 2003.

Legislation review and reform

The Queensland Water Act amended or repealed a range of water industry legislation. Queensland also reviewed and reformed several other water Acts.

Investment in new rural water schemes

The Queensland Government confirmed in June 2003 that it intends to proceed with the Burnett Water Infrastructure Project. As reported in the environmental impact assessment study for the project, the Government investigated other supply and demand management options but found that these would not adequately address the region's water requirements.

Except for the raising of the Ned Churchward Weir, the project passed through Queensland's environmental assessment processes. It was also approved by the Commonwealth Minister for the Environment and Heritage under the *Environment Protection and Biodiversity Conservation Act 1999*. The modified water resource plan for the Burnett Basin, which accommodates the project, complies with CoAG requirements. The final resource operations plan requires demonstration that the supply of water will not have an impact on the water allocation security and environmental flow objectives in the water resource plan.

Burnett Water and the Queensland Department of State Development commissioned studies of the economic and commercial aspects of the project. The economic analysis undertaken by Network Economics Consulting Group (NECG) as part of the environmental impact assessment process concluded that the project would deliver significant net economic benefits, estimated at A$1.7–$2.2 billion (at a real discount rate of 6 per cent). A subsequent study by ACIL Consulting supported the level of increase in agricultural production projected in the NECG study. In addition, PricewaterhouseCoopers' studies indicated that regional water demand would be sufficient to take up the new entitlements from the Burnett project and that these entitlements could be sold and/or leased at price levels that address CoAG requirements.

Some stakeholders disputed the economic analysis. The Queensland Conservation Council and the Australian Conservation Foundation commissioned a study that questioned the level of likely demand for water at CoAG-complying prices, particularly given the likelihood of depressed sugar and cane prices. The study also adopted a significantly higher estimate of environmental costs than the NECG evaluation. Based on available data, the study concluded that the project's rate of return would be lower than that required for it to be economically viable.

Queensland responded to these criticisms of the project's viability through further work by NECG and PricewaterhouseCoopers. NECG pointed to several deficiencies in the Queensland Conservation Council/Australian Conservation Foundation study. It advised that 'the Burnett River Dam is an economically and commercially robust project'. PricewaterhouseCoopers also criticised the Queensland Conservation Council/Australian Conservation Foundation study and supported the project's viability.

Public education and consultation

Queensland undertook public education and consultation activity on the development and implementation of water resource and resource operations plans, integrated catchment management activity, water and wastewater pricing and the Burnett Water Infrastructure Project. In particular, Queensland responded to criticisms in the 2001 NCP assessment about the need for greater transparency on changes to water resource plans between the draft and final plans. Regarding this, Queensland released its first two consultation reports, following finalisation of the water resource plans for the Barron River and the Pioneer Valley in December 2002. Each report includes: a summary of the content of the plan (including differences between the draft and final plans) and the plan's implications; a record of the consultation undertaken in developing the plan; a summary of the issues raised during the consultation process; and an explanation of how the issues raised have been addressed in the final plan. The reports are available on the Department of Natural Resources and Mines' web site.

Western Australia

Urban water and wastewater pricing

In the 2001 NCP assessment, the Council recognised that Western Australia's metropolitan urban water and wastewater services were, for the most part, pricing to recover costs, but raised concerns about the lack of transparency of the State's pricing process and about whether pricing in the future would continue to address CoAG obligations. At the time of the 2001 assessment, Western Australia indicated a commitment to establishing an independent economic regulator that would deal with the economic regulatory aspects in the water sector, in particular price regulation.

The Western Australian Government has a Bill before the Parliament that will create the Economic Regulation Authority. The authority will be an independent pricing and regulatory body with coverage of several industries that are currently regulated by Ministers, sector specific regulators and public sector officials. Its functions will include recommending to the Government about tariffs and charges for government monopoly services. Western Australia intended the authority to commence on 1 July 2003, but the Bill has been delayed in the Legislative Council and the 1 July commencement date was not met. The Government advised that, in anticipation of the establishment of the Economic Regulation Authority, it would develop a draft reference that asks the authority to consider water and wastewater pricing.

The State's major urban water service providers all apply two-part tariffs for water services. Western Australia applies wastewater charges for residential customers across the State based on gross rental value, which may lead to cross-subsidies between consumers particularly if waste discharge is relatively uniform across the residential sector. The Water Corporation will publish information on the distribution of wastewater charges in its annual report. The Water Corporation and the Western Australian Department of Treasury and Finance are to determine the means of illustrating any cross-subsidies.

Water entitlements

Water rights are sufficiently well specified in Western Australia. Licences are issued for between five and 10 years or for an indefinite period. There is also a presumption that fixed-term licences will be renewed if licence conditions are met. Most water management plans, which determine the amount of water available for allocation including to the environment, are still to be finalised or are under review. Apart from those assessed as being low priority, almost all plans are scheduled to be completed by 2005.

Western Australia has a register of water licences and entitlements, which is maintained by the Water and Rivers Commission. Although the register does not provide indefeasibility of title, it does allow the entitlement holder to register third party interests. A copy of the register is available for public viewing at Water and Rivers Commission offices or on request from the commission. An Internet register has been developed but is not yet operational.

Provision of water to the environment

Western Australia derives most of its water supply from groundwater. The State has no stressed river systems. Western Australia's approach to allocating water to the environment (formalised in the Rights in Water and Irrigation Act) is delivered via a tiered system of statutory water management plans (regional, sub-regional and local). Environmental water provisions are set in the plans either as notional or interim allocation limits, or as formal assignments where the water resource is highly or fully committed. Water management plans continue indefinitely, with review every seven years (or later if water use has not increased). Western Australia considered that the water planning process is on track against its implementation program.

Intrastate trade in water

Western Australia has established a fully operational system for water trading. It has policy guidelines for water trading and an interim subpolicy to guide the operational management of trading. Trading is not permitted without the agreement of registered third party interests. The Water and Rivers Commission has the role of collecting and providing market information until the market further develops. The Rights in Water and Irrigation Act and the *Environment Protection Act 1986* contain measures to protect environmental values.

Trade is concentrated in the South West Irrigation Scheme, reflecting the infancy of trading and the low level of demand for trading in the many parts of the State where water resources are not fully allocated. Most water management plans — which contain trading rules and are integral to the development of water trading — are still to be finalised or are under review.

Several regulatory measures have the potential to constrain water trading. The Rights in Water and Irrigation Act: provides scope for local by-laws to prohibit trades (although none exists at present); requires that a licence holder must be an owner or occupier of land or have access to land; and imposes a time limit for water entitlements to be used (before the entitlement may be forfeited). The Water and Rivers Commission may also refuse trades to prevent monopolies in water. These provisions appear to be a response to concern about potential speculation in the water market and the possible adverse environmental impacts of water trading. They have the potential, however, to reduce the security of entitlements and constrain the movement of water to its highest value use.

Institutional reform

Structural separation

As discussed above, Western Australia has a Bill before the Parliament to establish the Economic Regulation Authority to undertake a range of economic regulatory functions. The Bill provides scope for the Government to refer to the authority for inquiry any matter relating to a regulated industry including electricity, gas, rail and water. The Government indicated its intention to ask the authority to examine water and wastewater pricing.

Increased devolution of management responsibility for irrigation schemes

Western Australia has three main irrigation systems: the South–West Irrigation Cooperative, the Carnarvon Irrigation Scheme and the Ord Irrigation Scheme. The management of the South–West Irrigation Cooperative, which includes both the Preston Valley and the South–West Irrigation District and supplies water used to irrigate more than 9700 hectares, is devolved to local constituents.

In August 2001, the Water Corporation and the Carnarvon Irrigation Cooperative signed an operation and management contract providing for the transfer of the Carnarvon Irrigation Scheme to the irrigation cooperative by 30 June 2003 (subject to Government approval). The transfer will give the Carnarvon Irrigation Cooperative responsibility for retail water service delivery, and the operation, maintenance and renewal of the pipe distribution system and service connections. On 1 July 2002, the management of the Ord Irrigation Scheme was transferred from the Water Corporation to the Ord Irrigation Cooperative, and by December 2003 the assets will also be transferred.

Integrated catchment management

The impetus for natural resource management policy in Western Australia is dryland salinity. The Salinity Action Plan 1996 led to the creation of a State Salinity Council and five regional natural resource management groups. In accord with national and State policy frameworks, including the National Action Plan for Salinity and Water Quality and the Natural Heritage Trust extension, Western Australia's focus on salinity has evolved into a broader natural resource management framework that encompasses catchment issues. Consistent with this, the Government replaced the State Salinity Council with a new community-based body, the Natural Resource Management Council. A Western Australian Government senior officers group on natural resource management, representing the Department of Agriculture, Conservation and Land Management, the Water and Rivers Commission, the Department of Environmental Protection, the Ministry for Planning and the Department of Land Administration, provides whole-of-Government policy coordination.

All regional groups had developed natural resource management strategies by 2001, but the Government had not endorsed any strategies under State processes. The Government indicated that this is due to its lack of access to the accreditation mechanisms under the National Action Plan for Salinity and Water Quality. (The new accreditation mechanisms are not available to Western Australia until the Western Australian Government reaches a bilateral agreement with the Commonwealth Government.) Western Australia has now received Natural Heritage Trust extension funding which should enable it to refine its regional strategies in anticipation of a bilateral agreement on the national action plan.

Western Australia is developing the Waterways WA framework to facilitate the consideration of, and support for, land care practices to protect rivers with high environmental values. It expects to finalise the framework in 2003.

National Water Quality Management Strategy

Western Australia completed preparatory and development work on NWQMS implementation, including publishing the State Water Quality Management Strategy implementation plan setting out the State's processes for achieving its water quality objectives. Western Australia proposes to implement some key NWQMS elements — including guidelines for fresh and marine water quality and water quality monitoring — in 2003-04.

Legislation review and reform

Western Australia listed 35 water industry regulatory instruments for NCP review, of which it has completed reviews of 32. Of the remaining three, Western Australia has commenced one review and proposes to repeal two without review. The reviews recommended repeal of one instrument, reform of 18 others and found no change or no competition issues in 13 cases.

The Government endorsed the findings of each of the 32 completed reviews, mostly in 1999 or 2000. While it has some reform action under way, the Government has not yet completed all recommended reforms. The Government is reforming eight Acts via the Acts Amendment and Repeal (Competition Policy) Bill 2002, now delayed to 2003. These reforms will now be included in a second competition policy omnibus Bill in 2003. The Government is also drafting amendments or is developing drafting instructions for another six Acts, and has work under way on each of the remaining instruments.

Public education and consultation

Western Australia provided little information on its recent public education and consultation activity. The Council, however, received no indication from interested parties suggesting difficulties arising from inadequate consultation. Under the amended *Water Services Coordination Act 1995*, the Economic Regulation Authority will monitor the performance of the water services industry and service providers. For the purpose of this monitoring, the authority will be required to consult with interested groups and persons.

South Australia

Urban water and wastewater pricing

SA Water is South Australia's primary supplier of water and wastewater services to Adelaide and country towns, providing services to over one million people in 2000-01. The prices of SA Water's services are determined by the South Australian Cabinet on the recommendation of the Minister for Government Enterprises. The Government does not make publicly available the information it considers in determining prices, or the reasons for its pricing decisions. The Essential Services Commission of South Australia (ESCOSA) has no pricing oversight role for SA Water, and the Government does not propose that it will in the future.

In this 2003 NCP assessment, the South Australian Government committed to publish annual transparency statements on its decisions on SA Water's water and sewerage prices, with the first statement to address prices in 2004-05. The Government intends that the statement will establish the relationship of the pricing decisions to the CoAG pricing principles, provide information on SA Water's financial performance in the context of decisions on pricing and past and future expenditures, and address details of revenue, community service obligations, SA Water's capital expenditure program, and SA Water's profit and the distribution of that profit. ESCOSA is to review the processes involved in preparing the transparency statements and advise on the information supporting the pricing decisions. ESCOSA's report will form part of the transparency statements.

Water entitlements

South Australia has completed water allocation plans covering all 15 prescribed water resource areas on its original implementation program. It has converted water allocations to a volumetric basis in most areas of the State. The main area remaining is the South East Catchment, where revised water allocation plans and licence conversions will be completed in 2006. This is a significant catchment, having seven prescribed water resources. To assist in the conversion process in the South East Catchment, South Australia is installing meters in around 200 sites to obtain information on the volumes used by irrigators. The information from the metering project will be used in reviewing the water allocation plans in the catchment. The water licences in the catchment will then be converted to a volumetric basis in accordance with the revised water allocation plans.

The first stage of South Australia's upgraded water licence registry system is due to be in place in mid-2003. South Australia expects the system to be fully implemented by 2004-05.

Provision of water to the environment

In prescribed areas, water allocation plans are the primary mechanism for providing water for the environment. Under the *Water Resources Act 1997*, the plans must provide for sustainable allocation and use of the available water. Environmental water provisions are formally recognised and protected through the plans, which also include monitoring arrangements. Under the Act, the Minister may reduce the water allocations stipulated on licences to prevent damage to dependent ecosystems or a reduction in water quality.

South Australia completed the River Murray water allocation plan in 2003. The River Murray plan specifies water for extractive uses and provides up to 200 gigalitres each year for wetland management purposes with a further 22.2 gigalitres for environmental land management (in particular, minimising the effects of rising saline underground water) in the Lower Murray Reclaimed Irrigation Areas.

South Australia prescribed two additional water resources in the South East Catchment: (1) the Tintinara Coonalpyn prescribed wells area and (2) the Morambro Creek prescribed watercourse and prescribed surface water area. The Tintinara Coonalpyn water allocation plan was adopted in January 2003. The South East Catchment Water Management Board is preparing the Morambro Creek plan, which is expected to be completed in 2004. South Australia recently prescribed the Great Artesian Basin (Far North prescribed wells area), Marne River and Saunders Creek, with the water allocation plans expected to be completed in late 2005 or early 2006. South Australia also proposes to prescribe water resources in the Baroota area near Port Germein, in Greenock Creek adjacent to the Barossa Valley, and on Kangaroo Flat on the northern Adelaide plains.

The Government announced a 'Save the Murray' levy of A$30 a year for residential ratepayers and A$135 a year for non-residential ratepayers. The levy is to apply from October 2003 and is expected to raise A$20 million a year. It is to be paid into a Save the Murray Fund. Around A$10 million a year is to be spent on specific restoration programs, with the balance funding South Australia's contribution to a basin-wide initiative to provide water for increased environmental flows.

Intrastate trade in water

South Australia's water rights are sufficiently specified to enable efficient trade. Licences are issued in perpetuity and are separate from land title. In irrigation areas, the irrigation trust holds the water-taking allocation. Whether the trust devolves all or part of this allocation to its members varies among the trusts. Where the allocation is devolved, subject to the trust's approval, the owner of an irrigated property may transfer all or part of their allocation to another landowner within the district or to the trust. An irrigation trust may trade all or part of its surplus allocation (the allocation

held by the trust in excess of the sum of entitlements held by individual irrigators) to another party outside the trust. Outside the irrigation trusts, water licences are vested in the end users and are specifically recognised as personal property. The register of water rights includes provision for the registration of third party interests, and registered third parties must be notified before the Minister can approve a trade.

Permanent and temporary water trading occurs through a variety of mechanisms, including private trades, brokers or water exchanges. The Department of Water, Land and Biodiversity Conservation recently established a web site to improve the availability of water market information throughout the State and facilitate contact between buyers and sellers. There are a range of measures to protect the water rights of users and the environment.

There are limits on the volume of water that may be permanently transferred out of some irrigation districts. The Central Irrigation Trust has a 2 per cent cumulative limit on the proportion of entitlements that can be permanently traded out of the trust's districts, which has been reached in five of the trust's nine districts. The Central Irrigation Trust also limits permanent transfers from a property to 25 per cent of the landholder's original water allocation. There are reports of other constraints, including on temporary trade out of the Central Irrigation Trust and on permanent trade out of other trusts. The Council understands that the trusts limit outwards trade because of concern about possible adverse socioeconomic outcomes for their districts and to ensure that their irrigation infrastructure operates efficiently. Trust members are also concerned about the environment and future uncertainty about the amount of water available for extraction.

While the trading rules are set by the irrigation trusts (rather than the South Australian Government), the CoAG water agreements place responsibility on each State government to facilitate trading to enable water to be used to maximise its contribution to national income and welfare, where socially, physically and ecologically sustainable. Any constraints on trading need to be supported by rigorous evidence to demonstrate that the restriction provides a net public benefit and is necessary to achieve the trust's objective. The institutional reform obligation relating to the devolution of irrigation scheme management envisages devolution on the basis that governments establish appropriate regulatory frameworks for local management.

The trading provisions in South Australia's water allocation plans are generally directed at facilitating trade in a manner that maximises economic benefits while protecting the environment and the interests of other water users. While trade in the area is significant, it seems likely that the reduction factor is restricting trade to some extent. Permanent and temporary transfers are subject to a 20 per cent reduction in the total volume of water allocations transferred, so the amount of water acquired by the buyer is 20 per cent less than that sold. Alternatives to reducing allocations upon transfer include the Government reducing allocations for all water licence holders in an area by a uniform percentage and/or buying allocations in the market. These alternatives are likely to be more effective in reducing water use to a more sustainable level without adversely affecting trade.

Institutional reform

Structural separation

Unlike most other jurisdictions, South Australia has not imposed independent oversight of its major water and wastewater service provider's pricing and service standards. As discussed above, this lack of transparency makes it difficult to be confident that actions by SA Water will be consistently based on the principles in the CoAG water agreement. Production of comprehensive annual public statements on pricing, as the South Australian Government has undertaken to do, provide a means of addressing this matter.

Devolution of management responsibility for irrigation schemes

The South Australian Government owns and operates nine of 24 irrigation schemes in the lower Murray, representing 70 per cent of the irrigation areas. The Government completed a major study of options for improved management and rehabilitation in the areas in June 2001. It announced in 2002-03 that it had approved the study's preferred option of rehabilitation of the most viable parts of the irrigation areas, after a period of restructuring of the dairy industry. To assist with restructuring and rehabilitation works, the Government is providing financial assistance to eligible landowners. For irrigators in the government irrigation districts, conversion of the district into a private irrigation district is a condition of accepting the financial assistance for infrastructure rehabilitation.

The conversion of the Government irrigation districts into private irrigation districts will require the establishment of an irrigation trust (or several trusts). Irrigation and drainage infrastructure assets will be transferred to the trust. The trust will be responsible for the operation, maintenance and future replacement of the infrastructure. Levee banks and waterfront land will remain Government owned.

Integrated catchment management

South Australia continues to make progress in implementing integrated catchment management. There are eight catchment areas covering 95 per cent of the State. Six of these now have catchment water management plans in place. South Australia expects to adopt plans for the two remaining catchments in 2004. The South Australian Water Resources Council reviewed the implementation of the catchment water management plans in 2002.

The Government released a discussion paper on natural resource management and a draft Bill to improve coordination by consolidating 72 regional natural resource management groups into eight boards. The Government has also taken some preliminary steps to improve natural resource management arrangements, including establishing the Department of Water, Land and Biodiversity Conservation, a central natural resource management council and a natural resource management integration project task-force. South Australia signed a bilateral agreement with the Commonwealth Government to implement the National Action Plan for Salinity and Water Quality in June 2001, and the Natural Heritage Trust extension in April 2003.

National Water Quality Management Strategy

The commencement of South Australia's Environment Protection (Water Quality) Policy in October 2003 is a significant milestone in the State's implementation of the NWQMS. The policy establishes protected environmental values and water quality criteria for fresh and marine waters, adopting NWQMS guideline methods.

The State Water Monitoring Coordinating Subcommittee continues to review regional water quality monitoring arrangements and there is work in individual catchments to improve monitoring. The subcommittee made recommendations in 2003 to improve the collection, management and provision of water information. The Environment Protection Authority's review of the State Ambient Water Quality Monitoring Program, scheduled for late 2003, should provide further guidance on work needed to improve the State's water quality monitoring arrangements.

Legislation review and reform

South Australia completed reviews of 13 of the 14 water Acts listed for NCP review. The Government approved repeal of the remaining Act (the *Loans for Fencing and Water Piping Act 1938*) without review, to occur in October 2003. The reviews recommended repealing four Acts, three of which have been repealed. The Government approved repeal of the fourth Act, which is scheduled for September 2003. The review of this legislation, the *Irrigation (Land Tenure) Act 1930*, did not identify any major issues, but recommended that the Act be updated and consolidated. In nine cases, reviews identified no competition issues that required a change to legislation and/or recommended no change.

Investment in new rural water schemes

The Clare Valley Water Supply Scheme, which proceeded as an SA Water project during 2002-03, will involve the transfer of up to 7.3 gigalitres per year of filtered and treated River Murray water via a pipeline to the Clare Valley. The project involves the construction of 83 kilometres of new pipeline, two pumping stations and a 4-megalitre water storage. The scheme has three main objectives: to provide reticulated water to several townships; to enable improved water supplies to other areas of the Mid-North region; and to provide water to the Clare Valley region for irrigation and other bulk water purposes. The provision of water for irrigation is necessary to ensure the scheme is financially viable — the financial evaluation of the scheme assumed that over 95 per cent of the water will be used for irrigation.

An ecological study of the project identified a number of potential adverse environmental effects, including: waterlogging and drainage hazard formation; increased stream baseflow and baseflow salinity in the vicinity of new and existing irrigation; salinisation of the groundwater resource; release of chloraminated water to the environment; disruption to the environment from the pipeline construction works; and ecosystem impacts resulting from changes to the water balance and salinity levels, including potential threats to endangered or vulnerable species.

The study concluded, however, that importing River Murray water into the Clare Region for use in irrigation can be managed to avoid adverse environmental effects. The project does not require approval under the Commonwealth Environment Protection and Biodiversity Conservation Act. SA Water advised that the South Australian Government's approval of the scheme in November 2002 was subject to the establishment of an appropriate groundwater and surface water monitoring program. In cooperation with the Department of Water, Land and Biodiversity Conservation, SA Water confirmed that it is committed to implementing appropriate management measures.

The economic study of the Clare Valley project concluded that the project is economically viable taking account of wider benefits and costs, with a net present value of A$25.5 million (based on a discount rate of 7 per cent). SA Water advised that the economic evaluation incorporated an assessment of likely environmental costs in calculating capital costs but that regional monitoring costs (estimated to be $66 000 annually) were not included. Accounting for these costs would not, however, alter the viability of the scheme.

Public education and consultation

South Australia has undertaken public education and consultation activity relating to the development and implementation of water allocation plans and catchment water management plans. The Government's decision to publish annual transparency statements on its decisions on SA Water's water and wastewater prices should assist public understanding of the cause-and-effect relationship between prices, infrastructure performance, standards of service and related costs, and assist SA Water to provide levels of service that represent the best value for money for the community.

Tasmania

Urban water and wastewater pricing

All urban retail water and wastewater services in Tasmania are provided by local governments. The Government Prices Oversight Commission's Urban Water Pricing Guidelines for Local Government in Tasmania require local governments to set prices to recover costs. The guidelines also require local governments to report environmental costs incurred and community service obligations provided, and move to determining asset values on a fair value basis in accordance with the accounting standard AASB 1041.

The Government Prices Oversight Commission assesses local governments' compliance with the full cost recovery obligation in relation to water and wastewater services each year. The most recent assessment (for 2001-02) found that 21 of 28 local governments were in practical compliance with the full cost recovery obligation, including two that were in an agreed two-year transition to full cost recovery. The Tasmanian Government has taken several steps since the 2002 NCP assessment to assist local governments to achieve full cost recovery, including workshops for local government officers and a presentation on water assets and the NCP given by the Government Prices Oversight Commission.

Tasmanian local governments implement consumption-based pricing where cost-effective. In 1999, Tasmania subjected 34 local governments (selected according to a test developed by the Government Prices Oversight Commission), to cost-effectiveness studies, finding 18 that should change to a two-part tariff. Of these, 17 have now introduced a two-part tariff. The one exception found, in a trial of metering subsequent to the initial work, that a two-part tariff would not be cost-effective. The larger local governments have trade waste agreements with large dischargers or pricing regimes based on the volume and toxicity of discharge.

The Government Prices Oversight Commission audit of local government water and wastewater businesses for 2001-02 found that few local governments were reporting community service obligations. The audit also found that few local governments were identifying and funding own-use transfers, meaning that other water users are cross-subsidising local governments' water consumption. Tasmanian Government officials indicated that the Government would develop a response to these and other issues raised by the Government Prices Oversight Commission.

Water entitlements

Tasmania's *Water Management Act 1999* established a system of water entitlements whereby licences (and water allocations) are not legally attached to land titles and are transferable. Licences are specified in volumetric terms and also indicate the reliability of the water allocations. To obtain a water allocation, a person must generally hold a water licence. Licences are issued for 10 years, with a presumption of renewal, and are subject to a review of conditions after five years. The conversion of water rights under the previous system to licences and allocations under the new system is now largely complete. The Water Management Act established a register of licences, which includes provision for registering financial interests.

The *Irrigation Clauses Act 1973* (as amended in 1997 and 2001) established irrigation rights within irrigation districts that are separated from land and transferable within the district. Only an owner or occupier of land in the district, or a person who may hold land in the district, may hold irrigation rights. A holder of an irrigation right who no longer owns or occupies land in the district must transfer the right within six months or forfeit it. (The Minister may give a single extension of six months.) Compensation is payable where it is necessary to reduce irrigation rights, in situations where total allocations exceed the quantity of water available, as determined by a water management plan, or where there is inconsistency with the objectives of the Water Management Act.

Provision of water to the environment

Tasmania is addressing water allocations for the environment in two stages. First, the Department of Primary Industries, Water and Environment is determining environmental water requirements — the water required to sustain the ecological values of aquatic ecosystems at a low level of risk — to address the flow requirements for the State's rivers. Second, for stressed (or more developed) water sources, the Government preserves an amount of water for the environment determined by agreement or negotiation with the community and incorporated in a water management plan under the Water Management Act. The objectives of the Act include the sustainable use of the water resources and the maintenance of ecological processes and genetic diversity for aquatic ecosystems.

Tasmania identified 14 water sources for which it intends to develop water management plans. Environmental water requirements have now been determined for all of these. The provision of water for environmental purposes depends, however, on the Government also developing the water management plans. At 30 June 2003, Tasmania had completed no water management plans, although it had almost finalised the Great Forester River plan. Tasmania still expected to substantially complete environmental water provisions for the water sources on its agreed implementation program by 2005. The Government noted that an agreement by key stakeholders (including the Tasmanian Conservation Trust and the Tasmanian Farmers and Graziers Association) on generic principles to guide the preparation of the water management plans would greatly accelerate the development of water management plans.

Intrastate trade in water

Tasmania made significant progress in addressing its water trading commitments in 2002-03. It removed two restrictions on water trading identified by the Council in the 2001 NCP assessment as likely to be inconsistent with CoAG water trading commitments. At 30 June 2003, Tasmania had virtually completed the conversion of all former water rights (attached to land titles) to licences and allocations under the new legislation, removing a further constraint to trading.

Water market and trading administration does not appear to represent an impediment to trade. While Tasmania's register of water rights does not provide indefeasibility or surety of title, water rights are sufficiently well defined so as not to provide an impediment to trade. In addition, transfers require the consent of all parties with a registered financial interest in the water right. Tasmania has a register of licences, known as the Water Information Management System, which the Department of Primary Industries, Water and Environment maintains. Tasmania advised that trades are approved on average within seven days in Government-owned irrigation districts and within five to 14 days in unregulated systems, depending on third party interests. There are no Government impediments to the establishment of new trading mechanisms. Tasmania's arrangements also adequately address risks for the environment by requiring, for example, that transfers are consistent with the objectives of the water legislation and any relevant water management plan.

One remaining restriction on trading in irrigation districts is likely to be inconsistent with CoAG obligations — that is, the requirement that only an owner or occupier of land in the district may hold irrigation rights. Tasmania advised that this provision is intended to ensure water from publicly funded irrigation schemes is used for the purpose for which it was provided and to militate against speculation. The restriction is also likely, however, to affect the entry and activities of agents, brokers and other potential participants in the water trading market; as a result, it may reduce returns available to holders of irrigation rights and constrain the extent to which water is used for its highest value purpose. Tasmanian Government officials have indicated a preparedness to consider the continuing need for the measure. The Water Management Act includes a provision applying to unregulated systems that appears to have similar objectives, by providing scope for transfers to be refused if the quantity of water exceeds the amount that could be used sustainably for the intended purpose. The Council will look for Tasmania to consider the need for this provision.

Institutional reform

Structural separation

Tasmania's institutional arrangements appear to provide an adequate level of separation. The Rivers and Water Supply Commission, the Assessment Committee for Dam Construction and the Environmental Management and Pollution Control Board are effectively separate legal entities from the department and must comply with their own specific legislative requirements. Departmental representatives do not comprise a majority on either the Assessment Committee for Dam Construction or the Environmental Management and Pollution Control Board. In approving water management plans and water allocations, the Minister for Primary Industries, Water and Environment must comply with the Water

Management Act. While the Minister for Primary Industries, Water and Environment is also the portfolio Minister for the Rivers and Water Supply Commission, the Minister is bound in this case by the *Government Business Enterprises Act 1995*.

Many Tasmanian local governments have mechanisms for handling complaints and customers of local government water businesses have access to the Ombudsman. Tasmania is also considering arrangements for the handling of complaints as part of a wider review of the *Local Government Act 1993*. An issues paper, released in March 2003, indicates that the review is considering whether local governments should be required to adopt a formal complaints-handling procedure that has the confidence of their local communities. The review is also considering the case for establishing an independent complaints-handling body to deal with local government related matters.

Increased devolution of management responsibility for irrigation schemes

There are three Government owned irrigation schemes in the State: Cressy–Longford, South–East and Winnaleah. On 1 April 2002, management of the Cressy–Longford Irrigation Scheme was devolved from the Rivers and Water Supply Commission to the Cressy–Longford Irrigators Association. Tasmania transferred responsibility for the management of the Winnaleah Irrigation Scheme to local irrigators on 1 July 2003. The Rivers and Water Supply Commission retains ownership of the fixed assets (for water delivery and water storage). The Winnaleah irrigators are responsible for day-to-day scheme operations, administration and management (including price setting and staff management) and own the operational assets. Tasmania has commenced discussions with local irrigators on devolving management responsibility for the South East Irrigation Scheme.

Integrated catchment management

Tasmania's recent work on integrated catchment management appears to have focused on establishing an appropriate administrative framework. Tasmania enacted the *Natural Resource Management Act 2002* in November 2002, and established the Tasmanian Natural Resource Management Council in February 2003. The three regional natural resource management committees have commenced work. The State's natural resource management framework supports land care practices to protect rivers with high environmental values. The Tasmanian and Commonwealth governments signed a partnership agreement to implement integrated catchment management reforms in priority catchments as part of the National Action Plan for Salinity and Water Quality.

National Water Quality Management Strategy

Tasmania continues to implement the NWQMS framework. Significant developments since the 2001 NCP assessment include:

- the completion of the State Water Quality Monitoring Strategy;
- the setting of Protected Environmental Values for most of the State's catchments, and pilot schemes to develop water quality objectives;
- further work on the State of River reports;
- the establishment of linkages between water quantity and water quality issues in water management plans and State of River reporting; and
- the implementation of wastewater and stormwater management strategies.

Legislation review and reform

Tasmania has essentially completed the review and reform of the 18 water Acts on its NCP program. Several Acts were repealed or amended by the Water Management Act. This Act established a system of transferable water rights. The Irrigation Clauses Act (as amended in 1997 and 2001) established district irrigation rights that are separated from land and transferable within the district. The Water Management Act includes a provision applying to unregulated systems that allows transfers of water entitlements to be refused if the quantity of water exceeds the amount that could be used sustainably for the intended purpose. The Irrigation Clauses Act imposes a requirement that appears to have a similar objective — only an owner or occupier of land in the district, or a person who may hold land in the district, may hold irrigation rights. As discussed above in relation to water trading, these provisions may affect the development of the water trading market by limiting the activities of agents, brokers and other potential participants in the market, and as a result, may reduce returns available to holders of irrigation rights and constrain the extent to which water can be used for its highest value purpose.

Investment in new rural water schemes

In 2001, the Tasmanian Government announced an intention to proceed with the design of the Meander Dam project, 50 kilometres south west of Launceston. Water from the 43-gigalitre dam would be used primarily to increase the quantity and surety of irrigation water in the region. A mini hydroelectric power plant, connected to the State grid, is also proposed to operate at the site. The Tasmanian (A$7 million) and Commonwealth governments (A$2.6 million) are to contribute funding for the project.

At the time of the 2002 NCP assessment, the Tasmanian Government was assessing an application for a permit to commence construction of the Meander Dam under the statutory processes of the Water Management Act and the *Environmental Management and Pollution Control Act 1994*. The development proposal is also a controlled activity under the Commonwealth's Environment Protection and Biodiversity Conservation Act on the grounds of potential impacts on listed threatened species and communities, particularly the spotted tailed quoll and the plant species *Epacris aff. exserta*.

In a draft report in December 2002, an economic study commissioned by the Tasmanian Government concluded that the project would have a positive net present value estimated at A$30.4 million (at a 6 per cent real discount rate). The study also reported an alternative evaluation that found a lower, but still positive, estimated net economic benefit of A$9.6 million.

In late 2002, Tasmania's Director of Environmental Management issued an environment protection notice enabling the dam to proceed (subject to conditions) and the Assessment Committee for Dam Construction issued a permit for the dam. In January 2003, however, Tasmania's Resource Management and Planning Appeal Tribunal set aside the dam permit and environment protection notice following an appeal by the Tasmanian Conservation Trust and a private party. The Tasmanian Government subsequently introduced legislation to overcome the tribunal's decision and permit construction of the dam. The *Meander Dam Project Act 2003*, passed in April 2003, reinstates the dam permit and environment protection notice and removes any right of further review or appeal.

In making a decision under the Environment Protection and Biodiversity Conservation Act, the Commonwealth Minister for the Environment and Heritage must consider relevant environmental impacts and social and economic factors. The Council understands that the Commonwealth Government commissioned further work on the economic, social and environmental impacts of the project, which includes investigating ecological evidence of the effects on the spotted tailed quoll and the *Epacris* species. The Commonwealth Government's approval process is still to be completed.

Tasmania commissioned further analysis and recently submitted two additional reports to assist the Commonwealth Government's assessment: an economic analysis and a report on the social and community impacts of the project. The economic analysis reviewed the economic work submitted to the Resource Management and Planning Appeal Tribunal and took into account analyses undertaken for the Tasmanian Conservation Trust and WWF Australia, and initial work from the Commonwealth Government's evaluation. Assessing the project against a variety of deliberately conservative assumptions, the economic analysis found that the project would provide net economic benefits to Australia. The study of social and community impacts concluded that the Meander Dam is likely to result in: positive economic benefits for the agricultural industry and for rural centres and areas; higher employment, including job opportunities for young people; increased vocational education opportunities, particularly in agricultural and related industries; and an overall strengthening of the sustainability of the Meander Valley community.

The Council's preliminary view on the economic evidence is that the recent work commissioned by Tasmania provides a robust case to show that the dam would be economically viable. The analysis accounted for relevant costs and benefits, used an appropriate discount rate and responded appropriately to the issues raised by other parties. Sensitivity analysis indicated that the project is economically viable under a wide range of conservative assumptions. The Council has insufficient information at this time, however, to reach a preliminary view on Tasmania's compliance with the requirements on ecological sustainability.

In the event the Commonwealth Government approves the project, the Council will consider Tasmania's compliance with the CoAG requirements on economic viability and ecological sustainability in a supplementary NCP assessment. In conducting the supplementary assessment, the Council will take into account the economic and environmental studies undertaken by the Commonwealth and Tasmanian governments. It will also take into account the information provided by other parties including the Tasmanian Conservation Trust and WWF Australia.

Public education and consultation

Tasmania recent public education and consultation activity has mainly concerned the development and implementation of water management plans and water and wastewater pricing. Tasmania developed the water management plan for the Great Forester River using a public process. The Government publicly exhibited the draft plan for the catchment in the first half of 2002, providing an opportunity to better understand the issues and processes associated with preparing water management plans. It established a local consultative group, including a representative of environmental groups, to assist in finalising the plan. The consultative group will continue to work with the Department of Primary Industries, Water and Environment on ongoing water management issues associated with the plan. As a result of the Great Forester process, the department established similar consultative groups for other catchments.

In February 2003, the Tasmanian Government conducted workshops for local government officers across the State to raise awareness of full cost recovery and related pricing obligations. Also in 2003, the Government Prices Oversight Commission gave a presentation on water assets and the NCP to a local government accounting seminar. The Government wrote to all local governments that provide water and wastewater services, encouraging them to test their 2003-04 rating policies against full cost recovery obligations.

Australian Capital Territory

Urban water and wastewater pricing

The ACT Electricity and Water Corporation (ACTEW) — a Government owned corporation — supplies metropolitan water and sewerage services in the ACT. ACTEW and AGL have formed a joint venture (ActewAGL) under which ACTEW retains ownership of water and wastewater assets and service delivery is contracted to the partnership entity ActewAGL. Standards for economic performance and prices are set by the Independent Competition and Regulatory Commission.

ACTEW earned a combined water and wastewater rate of return on assets in 2001-02 of 6 per cent. ACTEW is subject to all Commonwealth and ACT taxes and tax equivalents. As an incorporated entity, ACTEW is bound by the *Corporations Act 2001*, which stipulates that dividends may be paid only from profits (including accumulated retained profits). The ACT Government applies a water abstraction charge of 10 cents per kilolitre. This covers the environmental costs of water use and the scarcity value of water, and applies to all customers.

ACTEW implements trade waste acceptance practices that allow for contracts with users of its services. The waste acceptance practices require users to contribute to the costs of monitoring and, in some cases as a transitional measure, to the cost of treating waste based on the volume and strength of the discharge. ACTEW is currently developing a charging regime that accounts for the ACT's specific trade waste circumstances. ACTEW's work will be submitted to the Independent Competition and Regulatory Commission for its review of ACTEW's water and wastewater charges for July 2004 to June 2009.

Water entitlements and the provision of water to the environment: progress report

The *Water Resources Act 1998* is the legal basis for the allocation of water, the issuing of licences to take water, and the determination of environmental flow requirements in the ACT. Water rights are separated from land title, are issued in perpetuity and provide the holder with a right to a share of the available resource. The Environment Management Authority maintains a register of licences and water allocations. There is no facility to record third party interests in an allocation, but the ACT advised that this can be readily addressed when the need arises.

The ACT's Water Resources Management Plan commenced in 2000. The plan sets out estimates of total water resources, environmental flow requirements and water available for consumption over the period to 2010. Under the ACT's environmental flow guidelines, flows are protected up to the 80th percentile (that is, the flow that is exceeded 80 per cent of the time). For most subcatchments, extraction for consumptive use is limited to 10 per cent of flows above the 80th percentile. For water supply catchments, 100 per cent of flows above the 80th percentile are available for abstraction (except for spawning flows). Groundwater extraction is limited to 10 per cent of average annual recharge. There are no stressed or overallocated systems within the ACT.

The ACT component of the Murray–Darling Basin Ministerial Council cap on water diversions is still to be finalised. The Government anticipated reaching a final position on the cap during 2003.

Intrastate trading

There has been no water trading in the ACT or between the ACT and another jurisdiction. The lack of trade largely reflects the available resource and the relatively small industrial and agricultural sectors in the ACT compared with other jurisdictions. Interstate trade involving the ACT depends on the development of trading rules for the Murrumbidgee and Murray rivers and the finalisation of the Murray–Darling Basin Ministerial Council cap on water diversions for the ACT. There is no legislative restriction on trading — the Water Resources Act permits the permanent or temporary transfer of all or part of a water allocation with the approval of the Environment Management Authority. The ACT Government considers there is insufficient demand for trading to warrant developing intraterritory trading rules or an intraterritory market.

Institutional reform

The ACT finalised a number of institutional reform matters, including: a standard customer contract setting out the terms and conditions for the supply of water and sewerage services to customers, encompassing the obligations on both ACTEW and its customers; ACTEW's utility services licence, which includes ACTEW's obligations regarding its operations, the environment and participation in benchmarking processes; and a range of industry and technical codes. ACTEW has a commercial operating focus.

Reflecting its location within the Murray–Darling Basin, the ACT's catchment management framework encompasses the objectives in the Murray–Darling Basin Commission's *Natural Resource Management Strategy 1990*. The ACT participates in the Murray–Darling Basin Initiative, including in activities aimed at halting degradation and improving the quality of resource management in the basin. Lying within the Murrumbidgee River catchment, the Territory participated in the preparation of the Murrumbidgee catchment blueprint by the Murrumbidgee Catchment Management Board (based in New South Wales) and is developing its own integrated natural resource management plan that reflects the approaches in the blueprint. The ACT plan will be the basis for the ACT's participation in the National Action Plan for Salinity and Water Quality. Local level activity is also under way. The ACT published subcatchment plans for Tuggeranong–Tharwa, Woden–Weston and the Southern ACT Catchment Group, and an implementation plan and support strategy for volunteers engaged in natural resource management.

National Water Quality Management Strategy

The ACT continues to implement the NWQMS framework. The ACT became the first Australian government to formally regulate drinking water quality when, in 2001, it adopted the Australian Drinking Water Guidelines 1996. ActewAGL published its first annual report on drinking water quality in 2002. The ACT also published a draft policy for sustainable water resource management (including proposals to improve stormwater and waste management) and developed a draft policy for acceptance of nondomestic trade waste into the sewerage network, based on the NWQMS principles. The ACT is yet to implement the current NWQMS guidelines for fresh and marine water quality and for water quality monitoring and reporting.

Legislation review and reform

The ACT identified five water industry Acts for review in accord with the Competition Principles Agreement. All five Acts have been repealed. The Water Resources Act is the legal basis for the allocation of water, the issuing of licences to take water, and the determination of environmental flow requirements in the ACT. The Act does not restrict water trading: the permanent or temporary transfer of all or part of a water allocation can occur with the approval of the Environment Management Authority.

Public education and consultation

The work by the Independent Competition and Regulatory Commission makes a significant contribution to the community's understanding of ACT water and wastewater prices and the relationship of prices to service quality and reliability. The commission established a price direction for ACTEW's electricity, water and wastewater charges for 1 July 1999–30 June 2004. Following a reference from the ACT Treasurer, the commission is currently investigating ACTEW's water and wastewater services to provide for a price determination from 1 July 2004. The investigation (being undertaken in conjunction with a review of the prices of the electricity services provided by ActewAGL) is a public process. The commission released an issues paper in July 2003 as a first step in a public awareness program. The commission is seeking submissions and community views on all aspects of the price review.

Northern Territory

Urban water and wastewater pricing

The Power and Water Corporation (PowerWater) provides the majority of the Northern Territory's urban water and wastewater services. Under the *Water Supply and Sewerage Services Act 2000*, the regulatory Minister (currently the Treasurer) is responsible for the economic regulation of PowerWater and the setting of service standards, on independent advice from the Utilities Commission.

PowerWater's water and wastewater operations earned income and community service obligation revenue sufficient to recover total operating, debt servicing and asset refurbishment costs in 2001-02, although operating losses were incurred in most urban centres (apart from Darwin) arising from the Northern Territory Government's decision that PowerWater should impose uniform tariffs.

PowerWater must operate in accord with the Territory's competitive neutrality policy framework, which incorporates taxes and rates (or equivalents). Under the Government owned corporation arrangements, dividends are agreed between the shareholding Minister and the PowerWater board. Asset consumption costs are calculated on a written down replacement cost basis. They are also calculated on a replacement annuity basis for comparative purposes and to ensure compliance with CoAG cost recovery requirements.

PowerWater's use of water resources is limited to water allocations defined in extraction licences, which are set at environmentally sustainable levels. This provision is intended to mitigate adverse environmental implications associated with water consumption in the Territory. Most environmental requirements imposed on PowerWater are conditions of extraction and discharge licences issued under the Water Act. While a licence may be issued for up to 50 years, the controller of water may revise licence conditions in the light of ongoing water allocation planning and environmental monitoring programs. In addition, the controller of water may require a licensee, at the licensee's expense, to provide data. There are also operational environmental requirements imposed on PowerWater, including monitoring and reporting water quality and quantity, and costs associated with pollution incident reporting. The costs of complying with water allocation and monitoring and reporting requirements are reported in PowerWater's annual report.

Water charges in the Northern Territory are use-based. There are no free water allowances, ensuring that water customers face a price incentive to use water economically. PowerWater intends to phase out cross-subsidies, and it reports remaining cross-subsidies in its annual reports. The Northern Territory Government provides funding to subsidise water and wastewater charges for pensioners in all Northern Territory centres, and for services in the Katherine, Tennant Creek and Alice Springs regions to maintain uniform tariffs across the Territory. Domestic and nondomestic wastewater charges are based on the number of sanitary units. PowerWater introduced a trade waste management system on 1 January 2002 that charges for trade waste discharged to PowerWater's sewerage system according to the volume and toxicity of waste.

Water entitlements: progress report

The Northern Territory has established a comprehensive system of water entitlements, backed by separation of water property rights from land title and by the specification of entitlements in terms of ownership, reliability, volume, transferability and, if appropriate, quality. Water entitlements are specified in surface water and groundwater extraction licences issued under the Water Act. Licences are generally issued for up to 10 years, with the Minister able to approve a longer period.

The Northern Territory's water rights registry system is a hard copy public database that contains details of licence holders, quantities of water and dates for renewal, but does not register third party interests. A capacity for third parties to register an interest is not likely to be an issue in the Northern Territory until the demand for water increases to the extent that water licences have some value. The Department of Infrastructure, Planning and Environment established a new electronic database to improve the administration of water licences. The department indicated that a formal policy for public access to water licence information (including through the Internet) is to be prepared in accordance with the Territory's *Information Act 2002*, which commenced on 1 July 2003.

Provision of water to the environment: progress report

Water allocation planning in the Northern Territory occurs through an integrated regional resource management process covering both surface water and groundwater. Water allocation plans may be declared for water control districts. The plans include contingent allocations for the environment. The plans are set for 10 years and reviewed every five years. Water advisory committees oversee implementation of the plans.

The Northern Territory Government proposes to develop water allocation plans for four of its six water control districts. It finalised the plan for the Ti–Tree Water Control District in August 2002. The remaining three plans are expected to be finalised in 2003-04.

At 30 June 2003, the Territory had progressed its scientific research on environmental water requirements. It had completed five research projects on environmental flows in the Daly and Douglas rivers and prepared a summary report on the projects. The Government advised that the summary and each report are being used to guide the drafting of the water allocation plan for the Daly River region and as references during the regional consultation on the plan.

Intrastate trade in water

At current levels of development, water supplies in the Territory are plentiful relative to demand. As a result, there is little, if any, demand for water trading and there has been no trade in licensed water entitlements. The Territory's legislation prohibits trade between consumptive and nonconsumptive water uses, to prevent environmental and cultural water allocations being traded to water irrigators and other water users.

The Northern Territory foreshadowed two general restrictions on water trading in all its water allocation plans. For river systems, the trading of entitlements from downstream to upstream within a specific system will not be permitted without approval. The Territory advised that this requirement reflects concern that uncontrolled downstream to upstream trade could have an impact on environmental water provisions and adversely affect the environment. Upstream trade will be approved only after it has been demonstrated that there will be no impact on the environmental provisions of the relevant water allocation plan. For groundwater sources, trading of entitlements will be restricted to within-aquifer transactions, reflecting physical and environmental constraints.

The Territory has finalised only one water allocation plan — the plan for the Ti–Tree Water Control District. Trading of water entitlements is possible, therefore, only in this water control district. In the Ti–Tree plan, trading in groundwater is restricted to within-zone transactions. The Northern Territory Government advised that this provision reflects the management of the groundwater resources within separate zones and the need to limit extractions within each zone to a sustainable level.

Institutional reform

Structural separation

On 1 July 2002, the Power and Water Authority became the first government business to be covered by the Northern Territory's *Government Owned Corporations Act 2001*. The authority is now known as the Power and Water Corporation (or PowerWater). Under the Government Owned Corporations Act, PowerWater's board of directors is accountable to a shareholding Minister (currently the Treasurer) for the performance of the corporation through a formal statement of corporate intent. Under the Water Act, resource management, water allocation and environmental regulation are the responsibility of the Minister for Lands and Planning. Under the Water Supply and Sewerage Services Act, economic regulation and the setting of service standards are the responsibility of the regulatory Minister (currently the Treasurer) acting on independent advice from the Utilities Commission.

The Northern Territory Treasurer continues to be responsible for agreeing on dividends with PowerWater (but as the shareholding Minister rather than as Treasurer), as well as setting prices (as the regulatory Minister). In performing these two roles, the Treasurer is advised by different agencies (by the Northern Territory Treasury on dividends and by the independent Utilities Commission on price regulation) and must comply with the relevant legislation. Dividends are transparently reported (in PowerWater's annual report, the statement of corporate intent and Budget papers) and the Utilities Commission is able to report publicly on pricing and/or in its annual report.

Commercial focus of the metropolitan service provider

The predecessor of PowerWater, the Power and Water Authority, operated on a commercial basis. The commercial focus of PowerWater is enhanced by the new Government Owned Corporations Act. PowerWater is required to operate, as much as possible, on a basis similar to that of a private sector corporation.

Integrated catchment management

The Northern Territory's integrated catchment management activity has progressed since the 2001 NCP assessment, with the principal achievements being:

- bilateral agreements with the Commonwealth Government on the National Action Plan for Salinity and Water Quality and the Natural Heritage Trust extension;
- the publication of the Ilparpa Swamp Rehabilitation Plan (Alice Springs);
- the appointment of an advisory committee, and extensive community consultation for the Darwin Harbour plan of management; and
- the introduction of new land clearing guidelines and controls.

The Northern Territory has published three catchment plans, two of which are being reviewed for compatibility with the national action plan and the Natural Heritage Trust extension. The Territory is developing three additional plans — including the Darwin Harbour plan, which will encompass a coastal marine protection strategy, a management plan for Darwin Harbour and the protection of mangroves. The Territory's natural resource management framework appears to facilitate support for land care practices to protect rivers with high environmental values. The focus on protecting high value rivers is likely to increase as a result of the Territory's participation in the national action plan and the Natural Heritage Trust extension.

National Water Quality Management Strategy

The Northern Territory continues to implement arrangements that take account of the NWQMS, principally via waste discharge licensing, water quality monitoring, and drinking water standards. It improved point source pollution management in 2002 by introducing the Trade Waste Management System and the Trade Waste Code. The Territory contributed to several NWQMS guidelines, including the revised NWQMS guidelines for fresh and marine water quality and for water quality monitoring and reporting. The Territory introduced the Framework for Management of Drinking Water Quality, and PowerWater published the Territory's first comprehensive report on drinking water quality. PowerWater is to review its drinking water monitoring program in 2003 to evaluate its effectiveness.

Legislation review and reform

The Northern Territory reviewed the Water Act and Regulations, the legislation providing for the use, control, protection and management of the Territory's water resources, in 2000. The Territory also reviewed the Water Supply and Sewerage Act. This Act was repealed by the Water Supply and Sewerage Services Act, which retained the single service provider status of PowerWater and implemented an economic regulatory framework.

Public education and consultation

The Northern Territory addressed water reform public education and consultation obligations.

Murray–Darling Basin Commission

In this 2003 NCP assessment, the main element of the water reform program that is relevant for the Murray–Darling Basin Commission is interstate water trading, which is a progress report issue. The commission is examining several issues relating to interstate trade in water, including the development of: a system of exchange rates to allow trading between regions and between different water entitlements in different States; adequate environmental controls for trading; efficient administrative arrangements for processing and approving trades; and a system of access to State-based registry systems to enable those interested in interstate trading to obtain the information necessary to conduct such trades. The commission is also undertaking work on barriers to interstate water trade, in consultation with governments. Recent work focused on two issues: (1) barriers to trade out of irrigation districts and (2) the impact (on interstate trade) of differential financial arrangements for bulk water between the States. The Council will consider further developments in relation to these issues when it assesses progress with interstate trading arrangements in the 2004 NCP assessment.

In 2004, the Council will also consider the implementation by River Murray Water of the recommendations of the independent review of its pricing arrangements undertaken in 2002. As part of this, the Council will consider the adequacy of reporting in the commission's annual report of each government's annual cost shares for River Murray Water and the corresponding bulk water volumes supplied in each State.