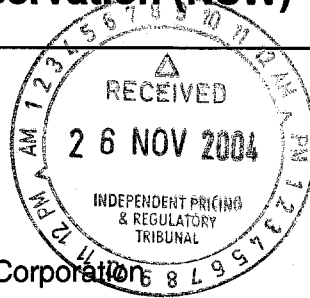




Department of
Environment and Conservation (NSW)

Our reference : HOF47457



Review of Operating Licence for State Water Corporation
Independent Pricing and Review Tribunal
PO Box Q290
QVB Post Office NSW 1230

24 NOV 2004

Dear Mr *Jean* Cox,

Thank you for the opportunity to make a submission to the Independent Pricing and Review Tribunal's inquiry on the Review of the Operating Licence for State Water.

The Department of Environment & Conservation (DEC) has responsibility for a number of areas of environmental protection that are relevant to State Water's operations, including water quality, river health and conservation of natural and cultural heritage.

The Operating Licence for State Water is an important regulatory instrument in how State Water's operations should be conducted and to codify expectations about obligations and performance.

DEC considers that State Water's Operating Licence should include appropriate environmental indicators that address its direct impact on the environment and, where possible, its contribution to general catchment and ecosystem health. State Water should also be subject to an obligation to operate in a way that minimises its impacts on the environment and to work towards mitigating impacts, where these are significant, such as cold water pollution.

Please see the attached submission for more detail on these and other issues. If you wish to discuss any matters in this submission, please contact Barbara Richardson on 9995-6041 or Barbara.Richardson@environment.nsw.gov.au.

Yours sincerely

Lisa Corbyn
LISA CORBYN
Director General

Att.

IPART Inquiry: Review of the Operating Licence for State Water Corporation

Department of Environment and Conservation (NSW) submission

Executive Summary

State Water's operations have considerable potential to affect the health of riverine ecosystems. Its objectives include operating with regard to ecologically sustainable development and must be in keeping with legislative requirements. The Department of Environment and Conservation (DEC) expects, therefore, that State Water's operating licence should include conditions for managing and mitigating the impacts of its operations on the environment.

Through the operating licence, State Water should be required to conduct its operations to deliver environmental flows, improve water quality, and reduce impacts on biodiversity and riverine habitats. State Water should also be required to consult with relevant agencies and groups, develop suitable environmental performance targets and collect information to measure its performance and progress towards targets.

The operating licence should include the collection of information to measure environmental impact, environmental condition and to determine the outcome of management intervention (both operational and constructed). In this submission, DEC suggests a number of appropriate indicators that State Water should be required to monitor. State Water should also collect information required to feed into issues-based planning, such as for cold water pollution or the Water Sharing Plans. This information should be reported to State Water's regulators.

Introduction

These comments will outline the Department of Environment and Conservation's views on the environmental impact of State Water's operations and how these should be managed by the operating licence, consider links to other IPART inquiries, and respond to relevant questions raised in IPART's issues paper.

Role of DEC

State Water supplies bulk water to irrigation companies, country town water supply authorities and other users, the quality and quantity of which is subject to regulations and agreements outside the scope of DEC's activities.

However as the principal environmental agency in NSW, the DEC is concerned with protecting the health of the environment and conservation of natural and cultural heritage.

In addition, Section 5 of the *State Water Corporation Act 2004* requires State Water to conduct its operations consistent with the principles of ecologically sustainable development, as stated in the *Protection of the Environment (Administration) Act 1991*, which is administered by DEC.

The particular environmental issues of concern to DEC are outlined below.

Environmental Impact of State Water Operations

State Water's operations can cause a range of environmental impacts that adversely affect river health.

The storage and release of water from dams and weirs radically changes the flow regime in rivers and reduces flow volume. For instance, the Macquarie Marshes, downstream from Burrendong Dam, now only receives half the large floods it received pre-regulation, and has shrunk to 40-50% of its original size. Water quality is also changed, both within storages and weirpools and downstream for considerable distances. Water stored behind dams becomes stratified with warm top layers and cooler deeper layers. The lower layers become cold, deoxygenated, and nutrient- and metal-rich. The lack of flow in storages and weirpools can promote the growth of toxic cyano-bacteria (also known as blue-green algae) blooms. When released downstream, this poor water quality can affect the health of river for some distance downstream (several hundred metres for metals and deoxygenation, and up to several hundred kilometres downstream for cold water). The cold water released from Burrendong Dam has been detected over 300 kms downstream, and has caused the loss of populations of native fish below the Dam.

The changes to the flow regime and the installation of structures can, through changed patterns of erosion and deposition, affect the stability of river banks and change the nature of river beds. This is a more indirect impact of river operations that can affect instream ecological function, the health of riparian (riverine) vegetation, and instream turbidity levels. For instance, rapid reduction in flow levels has been identified as a causative factor in bank slumping in the Murrumbidgee catchment, and Blowering Dam and several weirs now have targets for the rate of fall in water level.

Links to Bulk Water Price Review

The State Water Operating Licence should be aligned with IPART's Bulk Water Price Review so that the efficient costs of ensuring environmental protection are fully recovered through bulk water prices. Government agencies (particularly DEC, the Department of Primary Industries (Fisheries), and the Department of Infrastructure, Planning and Natural Resources (DIPNR)) provide input to environmental priorities which impact State Water's capital expenditure and in turn the terms of the Bulk Water Price Review.

State Water's Operating Licence should clarify the priority environmental outcomes and how the costs of State Water's proposed capital works (necessary to achieve these outcomes) should be treated over the course of the bulk water price path. The Operating Licence should require State Water to demonstrate or report on the progress of capital projects (for both river operations and water resource management) to which it has committed as a condition of price adjustments achieved as part of the price path.

DEC will discuss this issue further in its submission to the bulk water price review later in the year.

State Water Objectives, Functions and Areas of Operation

Section 5 of the State Water Corporation Act 2004 states that the principal objectives of the Corporation are to capture, store and release water in an efficient, effective, safe and financially responsible manner. The other objectives of the Corporation are:

(a) to be a successful business and, to that end:

- (i) to operate at least as efficiently as any comparable business, and
- (ii) to maximise the net worth of the State's investment in the Corporation,
- (b) to exhibit a sense of social responsibility by having regard to the interests of the community in which it operates,
- (c) where its activities affect the environment, to conduct its operations in compliance with the principles of ecologically sustainable development contained in section 6 (2) of the *Protection of the Environment Administration Act 1991*,
- (d) to exhibit a sense of responsibility towards regional development and decentralisation in the way in which it operates.

DEC considers the Operating Licence an important mechanism to achieve these objectives, by facilitating and monitoring State Water's overall environmental performance both now and into the future. For equity reasons, the Operating Licence should provide for an operating environment broadly consistent with that required of other State-owned corporations and authorities, particularly Sydney Water Corporation and the Sydney Catchment Authority.

As noted above, the principles of ecologically sustainable development, as contained in the *Protection of the Environment Administration Act 1991*, form objectives for State Water's operations. These principles are:-

- (a) the precautionary principle—namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.
- (b) inter-generational equity—namely, that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations,
- (c) conservation of biological diversity and ecological integrity—namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration, and
- (d) improved valuation, pricing and incentive mechanisms.

Further, provisions in the *Protection of the Environment Operations Act 1997* prohibiting water pollution also apply to State Water. Section 120 states that "a person who pollutes any waters is guilty of an offence", where waters include all rivers, streams, wetlands, estuaries, oceans, groundwater, channels and water in pipes, and pollution is defined as introducing any matter that may change water quality into waters or in a position where it can enter waters (see Dictionary in POEO Act). These Acts, therefore, also form part of State Water's regulatory environment and provide guidance to State Water in how its operations should be performed.

The Role of the Operating Licence

The role of State Water's Operating Licence is to promote objectives outlined in the section 5 of the *State Water Corporation Act 2004* and to set quality and performance standards for State Water in relation to issues such as customer rights, system performance and environmental performance.

The Government has agreed that releases of water colder than natural from the deeper waters of dams, known as cold water pollution (or CWP), are to be regulated via Water Supply Works Approvals for individual systems. Other system-specific requirements should also be regulated through these Approvals.

Other environmental impacts of State Water's operations should be regulated through general requirements on performance via the Operating Licence. This is discussed further below.

The Operating Licence should also mandate the reporting framework for performance indicators, to link indicators to agreed standards and targets and to work programs.

System Performance

The Operating Licence should be used to manage the impact of State Water's operations on the environment, consistent with the requirements of ecologically sustainable development.

Requirements for State Water to report on environmental indicators is one way to manage the environmental impacts of its operations. The Operating Licence should include appropriate environmental indicators that address its direct impact on the environment and, where possible, its contribution to general catchment and ecosystem health, and water quality for all purposes.

In particular, DEC is keen for the Operating Licence to include indicators that:

- Effectively measure and report on State Water's environmental performance on key parameters of resource consumption;
- Effectively measure and report on State Water's contribution to environmental outcomes for environmental issues outside the direct control of State Water (such as algal blooms arising from excess nutrients derived from the catchment);
- Incorporate findings and recommendations of any relevant audits;
- Reflect current regulatory and policy developments across water management in NSW;
- Demonstrate that investment decisions are delivering effective environmental outcomes;
- Are supported by robust data and information sets;
- Can be independently audited (both the indicators and supporting data);
- Provide an early alert to both IPART and State Water when a response is required to issues arising from trends in indicators; and
- Focus assessment on State Water's performance in key environmental areas.

DEC believes the suite of indicators needs to be robust enough to avoid the need for periodic changes. Indicators are used to track relative performance between reporting periods - if changed, then it would be difficult to tell if any trend was due to change in environmental condition or just a change in method. This would inhibit assessment of long term trends and assessment of whether investment to improve environmental outcomes has been successful.

For each primary indicator, the Operating Licence should specify the methodology used to derive the primary and supplementary indicators (i.e. the process of choosing indicators and how the relevant data are used to form the indicator).

The operating licence should require State Water to report on the environmental parameters directly affected by its operations, including water quality, energy and water consumption, greenhouse gas emissions and waste generation.

Activities outside direct control of State Water

In some areas (catchment management, ecological health and water quality), the ability to measure the exact impact of State Water's activities is constrained by the number of other activities affecting

catchment health. In this case, performance indicators should be used instead of outcome-based performance criteria.

DEC proposes the following indicators in this category:-

- ambient water quality monitoring (even though activities outside of State Water control can have an impact) so as to alert State Water and other agencies when there is a water quality issue that needs to be dealt with.
- flow regime is a key driver of river condition and ecosystem health. Therefore, there should be an ESD indicator for environmental flows that measures State Water's compliance against water release requirements of Water Sharing Plans, and other requirements under the Water Management Act (such as in Works Approvals).

The Operating Licence should include provisions for developing protocols for operation of systems (such as protocols for the operation of storages with multi-level offtakes to minimise release of cold water) to meet conditions in licences and Water Sharing Plans. Monitoring and auditing should include assessment of compliance with all conditions.

The Operating Licence should require State Water to demonstrate that it is performing its operations to assist in meeting community environmental values (as described in the National Water Quality Management Strategy). Government agreed interim water quality objectives (WQOs) have been set for NSW inland and estuarine waters (and ones for coastal waters are under development – all WQOs are available from the DEC website www.environment.nsw.gov.au). Note that appropriate standards and targets for vegetation, land, water and community are also to be developed by the Natural Resources Commission and implemented by catchment management authorities (CMAs) through Catchment Action Plans.

Water conservation indicators

State Water should identify system inefficiencies, and be required to perform its operations to minimise system losses. To do so, it should measure the quantity and timing of water released from storages or otherwise provided against the water delivered and report on this as part of the operating licence. State Water should be required in its Operating Licence to demonstrate that it is including in its capital planning process proposals to mitigate system inefficiencies (with cost-sharing to be determined by IPART, depending on both impactors and beneficiaries). However, DEC would not support proposals that lead to a higher degree of river regulation (i.e. those that cause the flow regime to become less natural), for instance more weirs or dams downstream of main storages and weirs.

Water savings resulting from system performance improvements may be covered by the National Water Initiative and/or State Government plans and policies (such as the State Policy on Water Savings, currently being reviewed), and allocated accordingly.

Where not already identified in Water Sharing Plans, State Water should be required to work with its customers in order to determine demand management targets, so demand does not outstrip system capacity to deliver and does not cause excessive environmental harm, for instance by prolonged duration of flows at one level.

Water Sharing Plans and Water Supply Works Approvals indicators

Advice should be sought from the Department of Infrastructure, Planning and Natural Resources (DIPNR) and DEC when developing suitable indicators to assess State Water's compliance with meeting conditions for water released and delivered, for all purposes. This is required for assessing compliance with Water Sharing Plans and minimising the environmental impact of operations. General conditions of operations should be included in the Operating Licence. Discretionary conditions relating to the protection of the environment for specific systems can include any necessary monitoring and reporting, and should be included in Water Supply Work Approvals when they are developed.

Performance indicators (see also next section)

Baseline explanatory data – State Water should collect baseline data relevant to its operations. As a minimum, these should comprise:-

- The volume, timing and rate of water released from storages, flow downstream and inflow into storages, and volume of water extracted. The *volume of water released from storages* is not sufficient to provide information on environment flows. Information is needed to determine if environmental flows are adequate, especially in terms of ecosystem health. This is essential information to feed into review of Water Sharing Plans. It is also needed to assess if environmental flow rules (in Water Sharing Plans) are being met. Conditions for releases should specify rate of change from one release level to another (i.e. rate of rise and fall in the river); and duration of flows at one release level.
- Water temperature needs to be assessed above, within and below storages. The temperature of inflows is the reference condition used for comparison with the temperature of releases.
- Monitoring data on algal blooms, which can indicate an unhealthy ecosystem. Algal blooms can also be used as an economic indicator as they reduce the environmental value of water by limiting the uses of the water resources. Toxic blooms can also make the water unusable for either drinking or other direct contact. Nuisance algae should be monitored upstream and downstream of the storage, as well as within the storage.
- The water quality of releases should be assessed periodically (including the range over day and night and under different conditions (season, flow, temperature and rainfall events)). Water quality in storages can vary seasonally and daily, depending on time of day and antecedent conditions (flow events, depth of storage, weather conditions). The assessment of release quality should include nutrients, metals (particularly iron and manganese), as well as temperature and algae. Comparisons should be made with inflow quality.
- Baseline monitoring to establish the environmental condition of riverine ecosystems just below State Water's storages (for the zone where the quantity and quality of released water is expected to substantially influence environmental condition), and to cooperate with other bodies (state or local government agencies and CMAs) in doing the same for aquatic ecosystems further downstream.
- Monitoring of the condition of ecosystems on State Water land, especially where the ecosystems include rare or threatened species. Where identified, these should be managed according to legislative requirements.

- Before undertaking any works, State Water should conduct site surveys for Aboriginal or other heritage items. Where identified, these should also be managed according to legislative requirements.
- Monitoring of waste generated and means of disposal (with reuse and recycling preferred above disposal to landfill); and energy used and generated. Energy use and greenhouse emissions should be measured so as to factor into decisions regarding future investment options, to facilitate least cost outcomes.

Environmental Obligations

State Water should be not only measuring the impact of its operations, but also be required to mitigate the impacts of its operations as far as possible (or work towards mitigating impacts).

All operations should be conducted in a manner to minimise environmental impacts. Impacts should be prioritised for action on a risk management approach.

State Water should be required to contribute to the following broad environmental outcomes:-

- Identify means to improve effectiveness of environmental flows specified in Water Sharing Plans, identify water savings, operate systems to minimise losses and provide information to the appropriate forums (which may be state or local government, CMAs, various community or customer forums).
- Improve water quality, including temperature, of releases from dams and weirs. Conduct a rolling program of studies, planning and implementation as required under the cold water pollution mitigation strategy. The results and implementation will be included in State Water's Water Supply Works Approvals, when agreed by Government.
- Reduce the impact of State Water structures on biodiversity. This includes cooperating with the Department of Primary Industries (Fisheries) to identify and implement means to improve fish passage.
- Minimise impacts of operation on river banks (for instance, rates of rises and falls in river heights, and duration of flows at one flow level) and co-operate in rehabilitating riparian vegetation and threatened communities, especially where affected by State Water operations.

Given these broad outcomes, when developing its Environmental Management Plan State Water should be required to:-

- consult with relevant agencies;
- develop suitable targets for progress towards meeting outcomes; and
- collect information on relevant indicators to measure this progress.

State Water should be proactive in identifying where environmental improvements can be made and seek the opportunity to implement changes to improve performance.

Costs of mitigation of environmental impacts should be identified and incorporated into bulk water price submissions.

State Water does not currently have an MOU with DEC. DEC agrees with IPART that MOUs are most suited for agreement on cooperation, not for specifying environmental conditions or performance. The Operating Licence and Water Supply Works Approvals are more appropriate regulatory mechanisms for environmental performance.

Auditing the Operating Licence

For each primary indicator, the Operating Licence should require reporting of:

- performance against the indicator over the reporting period;
- assessment of any trends compared to previous performance in relation to that indicator;
- analysis of reasons for any trends;
- progress towards a Government-agreed target for that indicator (such as the WQOs, or standards and targets set by the Natural Resources Commission);
- a summary of actions or programs to manage the indicator or progress towards the target over the reporting period;
- the rationale for the actions or programs implemented compared to alternatives considered; and
- expenditure and progress by State Water on the actions or programs relevant to indicators.

State Water should publicly report on indicators at least every two years, as well as to DIPNR and IPART as required. There should be audits of programs to address issues-based environmental impacts as required e.g. 5 year planning cycle for cold water pollution; 5-10 year review cycle for Water Sharing Plans.