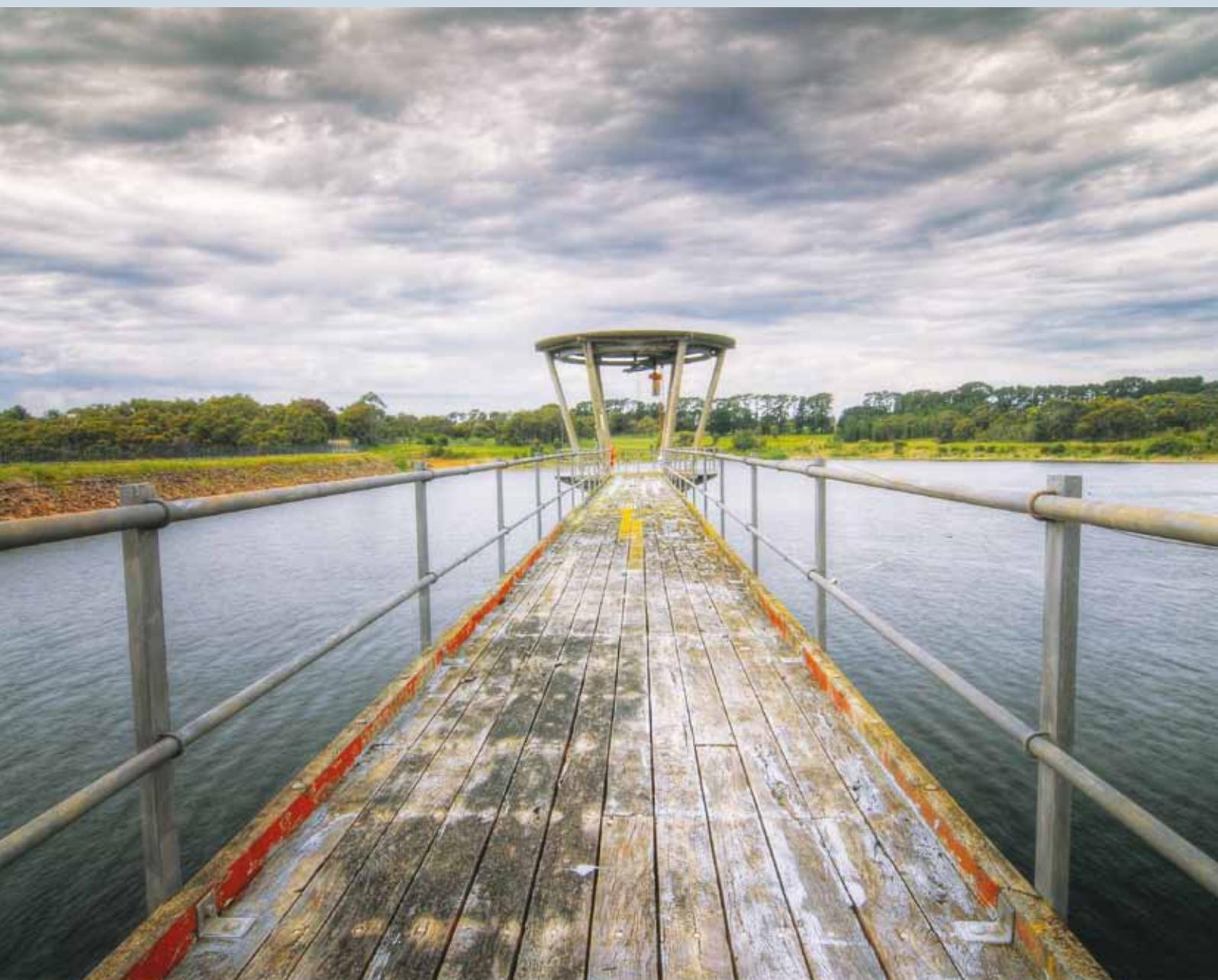


Analysis of effects of adopting Australian Water Accounting Standard 1



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The introduction of water accounting in Australia has its origins in the National Water Initiative (2004) to *support public and investor confidence in the amount of water being traded, extracted for consumptive use and recovered and managed for environmental and other public benefit outcomes.*

A stocktake of Australia's water accounting practices undertaken in 2006, found that existing water reports do not effectively focus on the needs of all external users. The stocktake recognised that concepts and principles from financial accounting standards could be applied to water information reporting.

This has led to the development of Australian Water Accounting Standard 1 (AWAS 1), launched in October 2012 following an extensive consultation period, which enables comparability of water accounting reports over time and between water reporting entities.

This effects analysis supports the release of AWAS 1 by examining the costs and benefits of adoption, drawing upon a series of reports, desktop reviews and industry research.

While there is a range of benefits to be realised from the application of AWAS 1, it remains difficult to fully quantify the cost of existing water information reporting. Further analysis will be required as more data becomes available.

History of water accounting in Australia

The National Water Initiative (NWI) aims to improve the measurement, monitoring and reporting of water resources in Australia. Water accounting is a key plank of this blueprint for water reform to create greater certainty for investment, productivity for rural and urban communities, and for the environment.

As part of this commitment to water accounting, Sinclair Knight Merz (SKM) undertook a stocktake and analysis of Australia's water accounting practices (the stocktake) and found that existing water reports primarily focused on the needs of management and direct stakeholders and not the needs of all external users. The stocktake identified concepts and principles relating to financial accounting standards that could be applied to support the development of a new approach to the reporting of water information.

In May 2009, the *Water Accounting Conceptual Framework for the Preparation and Presentation of General Purpose Water Accounting Reports* was approved by the Water Accounting Standards Board, along with the *Preliminary Australian Water Accounting Standard*. In October 2010, the *Exposure Draft of Australian Water Accounting Standard 1* (ED AWAS 1) was released for public consultation.

As part of the development of Australian Water Accounting Standard 1 (AWAS 1), the Water Accounting Standards Board – as the independent advisory board to the Bureau of Meteorology – conducted an effects analysis to assess the net benefit of the adoption of AWAS 1 to the community.

Approach to effects analysis

AWAS 1 was developed to ensure comparability of water accounting reports over time and between other water report entities to improve decision-making and stakeholder confidence. Prior to the release of AWAS 1, it was important to evaluate the costs and benefits of adopting these standards – to both preparers and users.

Due to the difficulties in quantifying benefits and costs, the evaluation takes primarily a qualitative approach. The evaluation is part of an evolving process, as the nature and extent of some effects of the adoption of AWAS 1 are unlikely to be known until after it has been applied.

AWAS 1 was developed to ensure comparability of water accounting reports over time and between other water report entities to improve decision-making and stakeholder confidence.

The effects analysis process

The objective of the effects analysis is to ascertain, to the extent practicable, the costs and benefits of adopting AWAS 1. To achieve this understanding, several studies have been commissioned.

A report, *Effects Analysis of AWAS Adoption*, prepared by Deloitte Access Economics (2012) estimates the cost of adopting AWAS 1. The report also identifies the benefits of general purpose water accounting reports to users and preparers.

The report compiles a range of information from different sources. Engaging stakeholders from a diverse range of preparers and user groups was an important part of this process. Stakeholders include water catchment authorities, urban water service providers, irrigation service companies, major water users, environmental water rights holders and investor groups.

Groups participated in discussions and answered survey questions on the ED AWAS 1 to assist in understanding the effects of final adoption.

A desktop review, *Standardised Water Accounting: Effects Analysis*, of the potential effect of the adoption

of standardised reporting in varying adoption scenarios was undertaken by Access MQ. It identifies the similarities between standardised water accounting and other disciplines in similar circumstances.

In addition, Ernst & Young prepared the *General Purpose Water Accounting Report: Independent Assurance Cost Estimate*, which provides an assessment of the estimated costs of independent assurance over general purpose water accounting reports.

As an assurance standard is presently under development – in partnership with WASB and the Auditing and Assurance Standards Board – Ernst & Young based their assessment on ASAE 3000 *Assurance Engagements Other than Audits or Reviews of Historical Financial Information*.

The Bureau of Meteorology also undertook its own research, comparing 22 existing publicly available water reports against the requirements of AWAS 1, to ascertain the types of water information that are being reported and whether AWAS 1 could provide equivalent or greater breadth of information.

The objective of the effects analysis is to ascertain, to the extent practicable, the costs and benefits of adopting AWAS 1. To achieve this understanding, several studies have been commissioned.

Effects Analysis of AWAS Adoption (Deloitte Access Economics)

The Deloitte Access Economics report is based on responses to survey questions, which were divided into four cost categories and three benefits categories. The cost categories included education and training, purchasing of equipment, publication and documentation, and cost of assurance.

The benefit categories included reduced reporting, informed decision-making and stewardship of a publicly owned natural resource.

As not all survey participants had completed a general purpose water accounting report, many found it difficult to quantify the potential cost and benefits of adopting AWAS 1.

Where information gaps or inconsistencies arose, additional research and assumptions based on Deloitte Access Economics' experience were used.

Of note, the cost of independent assurance for a general purpose water accounting report was determined by combining estimations from survey responses and an estimation of the incremental increase in the cost of an existing assurance engagement.

The analysis estimates the potential costs of preparing a single general purpose water accounting report will

range from \$13,000 to \$67,000 per annum, depending on the type of water report entity. It is anticipated the potential cost to produce a general purpose water accounting report will reduce over time due to efficiency gains. A range of potential benefits were identified from the survey results, including:

- Participants reported that the adoption of AWAS 1 could potentially replace existing reports, and report preparers and report users would benefit from having data in a consistent format.
- General purpose water accounting reports may improve public understanding of water resource planning and provide greater knowledge and confidence regarding water resources management, thus leading to improved community dialogue.
- Information that is independently assured could potentially improve public confidence and reduce risk, leading to improvements in decision-making.
- The adoption of AWAS 1 could increase transparency on the management and use of water resources over time and between organisations.

General Purpose Water Accounting Report Independent Assurance Cost Estimate (Ernst & Young)

To complement the Economic report, the Water Accounting Standards Board sought advice from Ernst & Young on the estimated cost of providing limited and reasonable assurance on a general purpose water accounting report.

The assurance assessment estimated it could take between 14 days for a limited non-complex general

purpose water accounting report to 69 days for reasonable assurance on a highly complex general purpose water accounting report. The estimated costs could range from \$20,000 to \$125,000.

Standardised Water Accounting: Effects Analysis (Access MQ)

The Access MQ report analyses the impact of applying a standardised approach to a diversified practice in varying circumstances. The review includes seven initiatives by way of comparative illustrations to AWAS 1:

1. Financial reporting
2. International financial reporting convergence
3. Public sector accruals reporting
4. Sustainability reporting by organisations
5. State of the environment reporting
6. Pollutant reporting
7. Water footprint reporting.

The review finds that the implementation of standardised reporting has transformed practice in many areas.

While water accounting is only one of various initiatives dedicated to enhancing water management in Australia, the review suggests it has the ability to inform users at various levels of water markets, water allocations decisions, management decision-making, and conservation and infrastructure decisions.

The research also reinforces that independent verification of information is critical for credibility of reporting.

Access MQ concluded that water accounting offered a significant step forward for Australian water reporting via standardisation of water terminology, information content and presentation.

Gap analysis (Bureau of Meteorology)

The gap analysis provides a snapshot of the type of information that is being reported against the requirements of ED AWAS 1.

The results from the *Gap Analysis of Water Reports Compared Against ED AWAS 1* (Gap Analysis) show that some of the information requirements are already being met by organisations.

According to the analysis, the majority of water reports produced by State and Territory governments already include information that is consistent with the requirements of the contextual statement. Nearly half of the State and Territory government water reports analysed included information on water storage, water inflows, and water outflows in line with the disclosure

requirements of ED AWAS 1. The reports also provided information on water rights, allocations and restrictions.

The analysis further demonstrates that urban and rural supply system organisations report on future demands and future infrastructure requirements, as well as having a high degree of reporting on water quality.

Information gaps in water reporting are also highlighted in the analysis. For instance, the reports reviewed did not include information on comparable information from previous reporting periods, breach of operations, contingent water assets or contingent water liabilities, and water for social and cultural benefits.

Access MQ concludes that water accounting offers a significant step forward for Australian water reporting via standardisation of water terminology, information content and presentation.

Benefits to report users

The research undertaken by Deloitte Access Economics finds that the adoption of AWAS 1 could potentially improve stakeholder confidence by enhancing transparency with consistent and comparable water reports.

Survey respondents commented on the potential benefit of improved decision-making by having consistent and comparable information and how this could potentially highlight areas to improve water efficiency. The benefits associated with international financial reporting –where comparable information can promote capital allocation of resources as analysts can effectively and efficiently compare investment opportunities – reinforces these findings.

Stakeholders also support volumetric information being accompanied by contextual and supporting information, a requirement of AWAS 1, as this information is critical for decision-making.

According to the research, the requirement for general purpose water accounting reports to be assured by an independent assurance practitioner ensures that

information is presented in a manner that informs decision-making. It also ensures consistency of interpretation of definitions over time and across multiple organisations.

The research by Access MQ also finds that improved transparency of information results in stakeholder confidence. With the introduction of accrual accounting in the public sector, information relating to products and services has become more transparent, resulting in the refinement of policy targets.

Transparency of information not only assists organisations and decision-makers, but is also of benefit to indirect users of standardised reports. By way of analogy, the research finds that the introduction of pollutant reporting enabled a community to identify an organisation that was using out-of-date machinery and emitting high levels of pollution. The community was also able to engage with the organisation resulting in new equipment being installed and lowering emissions.

The adoption of AWAS 1 could potentially improve stakeholder confidence by enhancing transparency with consistent and comparable water reports.

Costs of adopting AWAS 1

There is significant uncertainty around preparing cost estimations on the adoption of AWAS 1, as only a small number of organisations have produced a general purpose water accounting report.

Deloitte Access Economics finds that the majority of the costs associated with adopting AWAS 1 will be borne by report preparers – State and Territory governments and water utilities. This is due to the large number of water report entities for these types of report preparers and the estimated number of reports they could potentially prepare.

The potential cost to prepare a single general purpose water accounting report is estimated at \$13,000 to

\$67,000 per annum. If an extensive adoption by a wide range of public and private organisations is achieved, the cost to Australia is estimated to be \$49 million over the next ten years, at a discount rate of 7 per cent.

Assuming the benefits trajectory shown in Figure 1, the report finds that the adoption of AWAS 1 must generate \$15 million worth of benefits for the community by the eighth year to break even, at a discount rate of 7 per cent. The potential cost of assurance is included in the potential cost to prepare a single general purpose water accounting report.

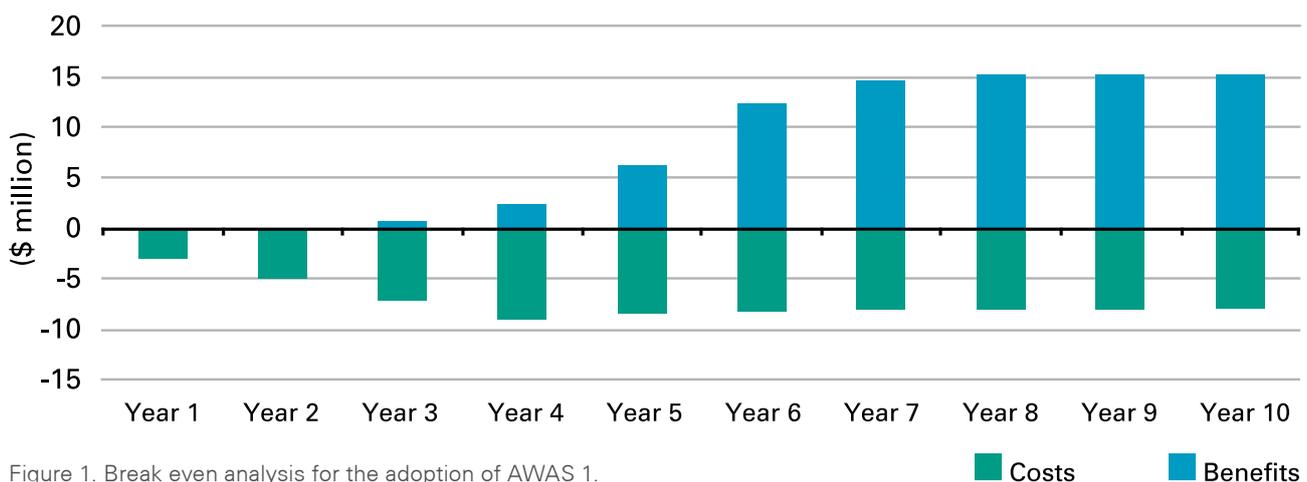


Figure 1. Break even analysis for the adoption of AWAS 1.

During the survey, stakeholders were asked to estimate the additional costs to their organisation to provide assurance on a general purpose water accounting report. The responses ranged from \$3,000 to \$60,000, with at least half the stakeholders not providing a response. With such a range being quoted by stakeholders and the importance of assurance of a general purpose water accounting report, the Water Accounting Standards Board decided to seek additional assessment into the potential costs relating to assurance.

The assessment estimated that a number of factors will influence the effort required to conduct an assurance on general purpose water accounting report. Primarily, though, the assurance effort will be most affected by complexity of the water report entity, the level of information disclosed, and the level of assurance sought.

Ernst & Young estimates an assurance practitioner may charge in the range of \$20,000 for a limited non-complex general purpose water accounting report to \$125,000 for reasonable assurance for a general purpose water accounting report with very high complexity.

It is worth noting the estimated cost to Australia was prepared using data collected from survey respondents who provided estimates of assurance costs that are lower than the assessment provided by Ernst & Young. The inconsistencies in the data between survey respondents and the assurance assessment are another indication of the uncertainty around the cost estimation of adopting AWAS 1.

Benefits to report preparers

As in most standardised reporting systems, the major direct cost is borne by the report preparer, with the benefits being received by stakeholders. While this is true, there are also benefits for the report preparer.

The availability of information prepared in a consistent and comparable format is likely to lead to greater public understanding of water resource planning. This has the benefit of greater public involvement in the water planning consultation process resulting in an acceptance of water resource decisions.

The key benefit to corporates from reduced cost of capital was identified by the Deloitte Access Economics report. This translates to reduced political costs and financial benefits in the public sector also.

The research suggests increased knowledge could translate into more realistic and achievable expectations of water managers' performance. It is possible that report preparers could demonstrate their stewardship of a natural resource by preparing general purpose water accounting reports. This benefit has the potential to increase transparency relating to how much water is used, the way it is used and from what source. Several respondents believed transparency translates to improved stakeholder confidence.

Other benefits to report preparers include the possibility of aligning financial accounting information with water information. This could support financial and water information concurrently on water trades and investment portfolios and therefore increase confidence.

Over time, as preparing general purpose water accounting reports matures, the role of educating water accounting practitioners will move from report preparers to tertiary institutions. This has the benefit of providing organisations with an already trained workforce with skills that are transferable between organisations.

Water managers that have prepared water reports to ED AWAS 1 commented that they benefited from identifying information gaps in the understanding of their water systems, allowing them to implement improvements. This experience aligns with the adage: that which is not measured is not managed.

For example, a water manager has water inflows of 1,500,000 ML, water outflows of 1,100,000 ML, and a volume of water of 400,000 ML that is unaccounted-for.

If the water manager is able to improve information gaps in their knowledge by 0.5 per cent through the adoption of a standardised reporting system, the unaccounted-for volume would reduce by 2,000 ML.

This would equate to a saving of \$18,000 at a conservative market price of \$9 per ML. If a very small improvement of 0.5 per cent in unaccounted-for volumes of water within water systems in Australia could be achieved on a national scale the benefit of water use efficiencies would have a positive effect on the whole economy.

The availability of information prepared in a consistent and comparable format is likely to lead to greater public understanding of water resource planning.

Management of water in Australia is an ongoing issue. Significant water-related economic, social and environmental decisions are regularly being made.

In 2008 the Australian Government launched the Water for the Future initiative, a \$12.9 billion investment in strategic programs, improving water management and delivering policy reforms.

To underpin this sort of major investment and policy associated initiatives, stakeholders and decision-makers demand better information, something that the adoption of AWAS 1 is anticipated to deliver.

The Australian economy in 2009–10 extracted 64 076 000 ML of water from the environment and consumed 13 476 000 ML with an estimated Gross State Product of \$1 281 180 million. If the introduction of AWAS 1 can assist in delivering efficiencies of as little as 0.5 per cent per annum by establishing a standardised water accounting framework, and thereby improving stakeholder decision-making, then the cost of implementation would be well justified.

However, there is significant uncertainty around the actual cost of preparing existing water reports and the anticipated cost of implementing AWAS 1. Research conducted by Deloitte Access Economics and Access MQ shows that organisations are not able to accurately quantify the cost of existing reporting on water information.

The Deloitte Access Economics report recommends that further research in Australia be conducted to more accurately assess the value of general purpose water accounting report to users. It further recommends that its adoption be promoted and supported. The Water Accounting Standards Board has determined further analysis of the effects of issuing AWAS 1 will need to be undertaken as data in relation to the costs and benefits become more quantifiable.

Additional resources

- Deloitte Access Economics (2012), *Effects analysis of AWAS adoption*
- Macquarie University (2012), *Standardised Water Accounting: Effects Analysis*
- Ernst & Young (2012), *General Purpose Water Accounting Report: Independent Assurance Cost Estimate*
- Water Accounting Standards Board (2012), *Gap Analysis of water reports compared against ED AWAS 1.*

Further reading

Further information in relation to Australian Water Accounting Standards is available on the WASB website: www.bom.gov.au/water/standards/wasb

The website gives access to:

- National Water Initiative
- *SKM Stocktake and Analysis of Australia's Water Accounting Practice*
- Water Accounting Conceptual Framework (WACF)
- Australian Water Accounting Standard 1 (AWAS 1)
- Consultation paper: Assurance Engagements on General Purpose Water Accounting Reports
- Water Accounting Standards Board: International water accounting
- A possible water accounting vision 2030.

Endnotes

- ¹ After an extensive review process on the ED AWAS 1, WASB did not make any material changes in the development of AWAS 1 that would affect the outcome of the survey.
- ² Effects analysis of AWAS adoption, p. 10.
- ³ Standardised Water Accounting: Effects Analysis, p. 11.
- ⁴ *ibid.*, p. 15.
- ⁵ *ibid.*, p. 27.
- ⁶ Effects analysis of AWAS adoption, loc. cit.
- ⁷ Effects analysis of AWAS adoption, op. cit., p. 8.
- ⁸ Effects analysis of AWAS adoption, p. 19.
- ⁹ This is based on 190 report preparers progressively taking-up AWAS 1 over a four year period to create approximately 360 reports per annum.
- ¹⁰ In comparison the water industry traded \$3 billion of water in 2009-10 (National Water Commission, Annual Report 2010 11 p. 39) and Urban utilities spent \$5.5 billion in 2010-11 on capital expenditures (National Water Commission, National Performance Reports 2010-11: Urban water utilities, p. 3).
- ¹² *ibid.*, p. 9.
- ¹³ In 2009–10, 64 076 000 ML of water was extracted from the environment and used within the Australian economy. (Australian Bureau of Statistics (ABS) 2010, Water Account, Australia, 2009-10, cat. no. 4610.0, ABS, Canberra, p. 5.)
- ¹⁴ *ibid.*
- ¹⁵ *ibid.*
- ¹⁶ *ibid.*

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