Sustainability, institutionalization and the duality of structure: a partial story with contested meanings within the political context of a water business

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Abstract

This paper examines the how and to what extent did the process of the institutionalization of sustainable management practices take place within a Victorian water business over the period 2001 to 2010. The institutional change model of Dillard et al., (2004) is adopted, which integrates institutional theory, Weber’s notions of capitalistic institutions and structuration theory. The paper illustrates how in 2001, the principles New Public Management and environmental regulatory compliance, established at the political and economic level, were the basis upon which environmental and financial management practices were established within the Victorian water industry, which were subsequently the basis upon which structures of signification, legitimation and domination were reproduced at the organization level of a Victorian water business. The paper also illustrates the role of agency in initiating institutional change. Subsequent to 2001, the paper proceeds to illustrate how regulatory and legislative changes at the political and economic level have resulted in changes in sustainable management practices at the organizational field level and subsequently the organizational level. The paper is still in the early stages of development. Subsequent versions will draw upon additional interview data to explain how the process of institutionalization occurred subsequent to 2001.
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1. **Introduction**

The most developed area of sustainability accounting research is corporate disclosure studies (Gray, 2002; Gray et al., 2009; Owen, 2008; Qian et al, 2011; Spence et al., 2010; Thomson, 2007). However, there has been an absence of field research into the internal processes of social and environmental reporting and decision making (Adams, 2002; Gray, 2002), with the result that the environmental management systems (EMS) and management accounting interface is under researched (Parker, 2005; Ferreira and Moulang, 2010; Qian et al., 2011). However, management accounting, therefore environmental management accounting (EMA), is necessary for sustainable management because it overcomes the limitations of conventional accounting (Qian et al 2011) and provides a basis to improve decision making (Burritt and Schaltegger, 2010). With particular reference to the public sector, Owen (2008) and Qian et al., (2011) observed that sustainability accounting research, particularly EMA, outside the private domain is conspicuous by its absence. Therefore, Ball and Grubnic (2007) believe that there is a need for researchers to provide a theoretical framework to inform the development of sustainability accounting in the public sector, whilst Gray et al., (2009) and Owen (2008) believe that engagement with the public sector may provide vibrant and ‘fruitful’ examples for new accountings.

In order to address this gap, this paper presents the results from a longitudinal case study into the adoption of sustainability accounting within a state Victorian public sector water business within Australia over the period 2001 to 2010, in order to examine how, and to what extent did the processes of institutionalization, transposition and deinstitutionalization of sustainable development practices take place within the social context of a publicly owned water business. The significance of the role of accounting in the management of water businesses has been highlighted by the extensive research into the role of Accounting in the privatization of water businesses within the United Kingdom and Africa (Ogden, 1995, 1997; Ogden and Anderson, 1999; Ogden and Clarke 2005; Rahaman et al., 2007). Gray et al., (2010) observed the need to develop social accounts for water whilst fieldwork studies, particularly longitudinal case studies, are necessary in order to study stability and institutional change, particularly with regard to sustainable development (Bebbington, 2007; Burns, 2000; Owen, 2008; Siti-Nabiha and Scapens, 2005; Tsamenyi et al., 2006; Larrinaga-
In order to investigate the case, this paper adopts the Dillard et al., (2004) framework, which incorporates institutional and structuration theories for the purpose of understanding the institutions, accounting practices and change processes associated with sustainable development within a water business over the period 2001 to 2010. This framework enables changes in sustainable development practices and the influence of sustainable development practices on institutional and organizational change within a publicly owned water business to be more clearly understood.

The paper is structured as follows. The next section provides an overview of the theoretical framework adopted for the study. Section 3 outlines the case study and research method approach. Section 4 analyses the results from the case study. Section 5 provides a discussion and concluding comments.

2. The Dillard et al., model of organizational change

Sustainability accounting research has seen a proliferation of theoretical perspectives, within complex social, political and economic contexts (Adams and Whelan, 2009), which have been developed largely without reference to internal corporate variables (Adams, 2002). These theoretical perspectives can be classified as micro level theories of social accounting, such as stakeholder theory, legitimacy theory and institutional theory, and social accounting theories inside the organisation, such as structuration theory, as well as the heartland group of theories, which include political economy accounting and the deep green ecological perspective (Gray et al., 2010; Parker, 2005). Of these systems theories, institutional theory, or New Institutional Sociology (NIS) (DiMaggio and Powell, 1983; Meyer and Rowan, 1977), has been increasingly used to examine sustainability reporting and practices (Bebbington et al., 2009; Ball and Craig, 2010; Qian et al., 2011; Schaefer, 2007; Rahaman et al., 2004) as well as public sector accounting (Edwards et al., 2005; Ezzamel et al., 2007; Modell, 2006; Modell et al., 2007; Newberry, 2002).

However, as a result of perceived limitations of institutional theory, researchers have begun to incorporate institutional theory with structuration theory (Giddens, 1976, 1979, 1984; Macintosh and Scapens, 1990, 1991; Macintosh, 1994). Granlund (2001) combined structuration theory and institutional theory to analyse the nature and origins of the stability of management accounting systems (MAS), Seal (2003) incorporated institutional theory and structuration theory to analyse local authority budgeting practices whilst Conrad and Guven Uslu (2011) employed concepts from structuration theory and institutional theory in order to examine the implementation of payment by
results and its implications for organisation change within three National Health Service Trusts. With specific reference to sustainability accounting, Gray (2002) observed that it is under theorised with a resulting need for an even greater metatheory. One such metatheory that incorporates institutional theory and structuration theory is the Dillard et al., (2004) framework. Given that that researchers of sustainability accounting are confronted with complex political and economic contexts (Adams and Whelan, 2009) and theories such as legitimacy theory are silent on the “politico-economic” context (Spence et al., 2010), the Dillard et al., (2004) framework offers the potential to enable researchers to study the institutionalization of sustainability accounting practices as a process that considers the social, political and economic aspects that make up the context within which an organisation functions. Lapsley et al., (2009) observed that a fundamental issue associated with public sector accounting, and therefore sustainability accounting in the public sector, is the political context within which it operates, whilst Modell (2009) observed that little is known about the micro dynamics of public sector reforms in individual organizations and that researchers need to pay more explicit attention to the recursive aspects of change across different levels of analysis. Dillard et al., (2004) believe that meaningful change is more likely motivated and better understood where the societal context can be explicated and linked to social action through the various levels of the social order.

2.1 The Dillard framework

Because institutional theory gives little theoretical consideration to the processes whereby institutional practices are established, their socio-economic and political context, the role of human agency and power, and the political nature of organizations (Dillard et al., 2004), Dillard et al., (2004) developed a theoretical framework that incorporates institutional theory with Weber’s ideas concerning rationality and power and structuration theory (Giddens, 1976, 1979, 1984). With regard to sustainable development, Gray (2010) argues that conflict is unavoidable, a sustainable state will be the result of interactions between organisations, individuals, societies and states, there will be contradiction in the accounting systems, and the language and meanings implicit in the term “sustainability” are highly contestable. The application of the Dillard et al. (2004) model has the potential to illustrate how structures of signification, legitimation and domination associated with sustainable development at the political economic level, the organizational field level and the organizational level were shaped by contradiction, conflict and unintended consequences. Specifically, the development of sustainability practices within an organization cannot be adequately explained or described without considering the signification, legitimation and domination structures
not only at the organizational level but also at the organizational field and societal levels. Bebbington et al., (2009) observed that organizational dynamics influence the extent to which institutions are perceived as legitimate as well as shape managerial decision-making, whilst Gray (2010) believes that if narratives of sustainability are to be considered at the organisational level, then accounts at the organisational level that we need to be embraced.

The Dillard et al., (2004) framework, illustrated in Figure 1, represents organizational change in the context of historical, social and political factors in the institutionalization, transposition and deinstitutionalization of practices. It conceptualises institutionalization as a process which can be decomposed at three different levels: (1) the economic and political level, which disseminates general taken-for-granted norms throughout society; (2) the organizational field level, which translates the social, economic and political parameters expressed in the general taken-for-granted norms into organizational field criteria; and (3) the organizational level, where the organisational field practices provide the legitimating and regulative basis for action (Cruz et al., 2009). In contrast to Burns and Scapens (2000), who used Old Institutional Economics (OIE) to recognize that MAS and practices are organizational rules and routines, Dillard et al., (2004) extended the Burns and Scapens framework in order to represent the dynamics associated with the institutionalization process. Hopper and Major (2007) revised the Dillard et al., (2004) framework by theoretical triangulation which involved economic, labour process and actor network theories in order to explain why a Portuguese telecommunications company adopted ABC.
2.1.1 The Dillard framework and institutional theory

The Dillard framework incorporates institutional theory by treating institutionalization as a political process which reflects the relative power of organized interests and the actors who mobilize around them (Dillard et al., 2004). Put simply, institutional theory argues that organizations tend to conform to prevailing beliefs and values, resulting in the homogenization of organizations within an organizational field through a process known as isomorphism (DiMaggio & Powell, 1983; Dillard et al., 2004), a constraining process that forces one unit in a population to resemble other units (DiMaggio & Powell, 1983). There are three types of isomorphism, coercive, mimetic and normative (DiMaggio & Powell, 1983). A second element of institutional theory is decoupling, which is where organizations, whilst maintaining standard and legitimized structures, vary their activities in response to practical considerations for the purpose of resolving conflicts between ceremonial rules and efficiency (Meyer & Rowan, 1977).

2.1.2 The Dillard framework and Weber’s Axes of tension

Having outlined the role of institutionalization, the Dillard framework subsequently uses Weber’s three dimensions of representation, rationality and power in order to specify the role of these dimensions as part of the context within which action and change occur within the institutionalization process (Dillard et al., 2004). These three dimensions are used to analyse and understand organizational actions within a larger institutional and societal context (Dillard et al., 2004), that is within the economic and political level, the organizational field level, and the organizational level. They also assist in understanding decoupling and the types of practices that are more likely to be decoupled (Dillard et al., 2004).

2.1.2 The Dillard framework and structuration theory

Finally, the Dillard framework incorporates structuration theory to explain how organizational change occurs at the economic and political level, the organizational field level, and the organizational level in both routine and critical situations. Weber’s three axes of tension, representation, rationality and power coincide with three structuration dimensions of signification, legitimation and power (Dillard et al., 2004). That is, signification equates to representation, legitimation equates to rationality, and domination equates to power. Structuration theory, which is the conditions governing the continuity or transformation of structures, and the reproduction of systems (Giddens, 1976, 1979, 1984), is a sensitizing device that enables researchers to understand organizational change as a process involving simultaneous changes in structures of signification, legitimation and domination (Macintosh & Scapens, 1991; Macintosh, 1994). Its central component is the duality of structure, where agents simultaneously reproduce or change structures of signification, legitimation and domination by drawing upon the ‘modalities’ of structuration, interpretive schemes, normative rules, authoritative and allocative resources (Giddens, 1979, 1984). These structures exist in “virtual time and space” and are drawn upon by agents in “specific time-space settings” (Macintosh, 1994, p.179).

Structuration theory distinguishes between system and structure. Systems are the visible practices that are reproduced across time and space by human agents, whilst accounting structures are the rules and resources that bind these practices into systems that are continuously reproduced (Giddens 1979, 1984; Roberts and Scapens, 1985; Macintosh & Scapens, 1990). The reproduction of structures are conditions of human action or agency, the result of which is unintended consequences (Giddens, 1979; Granlund, 2003). Systems comprise three structural dimensions: signification (meaning), domination (power) and legitimation (morality) (Giddens, 1984). Therefore,
Management Accounting systems comprise the three structural dimensions of signification, legitimation and domination because they are interpretive schemes, embody organizational norms, and comprise authoritative and allocative resources (Macintosh & Scapens, 1990; Macintosh, 1994, 1995). Related to domination, the dialectic of control refers to how the less powerful manage resources in order to exert control over the more powerful (Giddens, 1984).

Through the duality of structure, structuration theory links structure to agency, which is the intentional actions of self-conscious individuals to reflexively monitor their own and others’ actions in social settings (Macintosh & Scapens, 1991; Macintosh, 1994), also known as the reflexive monitoring of conduct or action (Giddens, 1979). At the practical level of consciousness, agents rely upon implicit stocks of knowledge about how to act and interpret the actions of others (Macintosh & Scapens 1990, 1991; Macintosh, 1994). In a routine situation, agents, at the practical level of consciousness, reproduce existing systems and therefore structures because they are motivated by an unconscious need for ontological security (Giddens, 1984; Macintosh & Scapens, 1990; Macintosh, 1994; Buhr, 2002), which is “the implicit faith” that they have in the codes of signification and normative regulation (Giddens, 1979, p.219). In contrast to a routine situation, a critical situation is a set of circumstances which radically disrupts and challenges routines (Giddens, 1979; Macintosh & Scapens, 1990; Macintosh, 1994; Busco et al., 2006), resulting in agents relying upon their ‘discursive consciousness’ (Giddens, 1979).

2.2 The Dillard framework – institutionalisation and the duality of structure

Through the duality of structure concept, structuration illustrates the recursive relationship between structure and agency, that is structures of signification, legitimation and domination are the medium and outcomes of the human conduct they recursively organise (Giddens, 1979, 1984; Macintosh, 1994). Within the Dillard framework, institutions and actions are reciprocally related and institutional features, motivated by the socio-historical context, are reflected in rules predicated on norms and values (legitimation) and in the prevailing symbolic and sense making structures (signification) (Dillard et al., 2004). Resources are allocated (domination) based on these accepted rules, which in turn reinforce the existing structures, rules and resource allocations, leading to structural stability which enables and constrains action (Dillard et al., 2004).

According to Dillard et al., (2004), the process of institutionalization, as illustrated in figure 1, proceeds in a recursive manner from the economic and political level through to the organizational field level and finally to the organizational level. That is, the economic and political level (PE)
establish the criteria for the norms and practices for a specific industry or organizational field, the organizational field translates the economic and political norms and values, or criteria, into specific values, or criteria, for the organizational field. Finally, the legitimate practices of the organizational field are a function of the organisational field criteria. The economic and political level represents the political, economic and social systems, which establish the norms and values, whilst the organisational field comprises industry groups, professional institutes and geographical collectives (Dillard et al., 2004). Dillard et al., (2004) explain further that the economic and political level provides the foundations for organizational field level institutions, and the organizational field provides the context for the institutions confronted by and embedded in organizations. In particular, Dillard et al., (2004) argue that as part of the duality of structure process, the interests of powerful groups must be reproduced as part of the recursive process of institutionalisation as it will enable an understanding of changes as part of the institutionalization process. In order to link structure to agency at the political economic level, Dillard et al., (2004) observe that the primary agents are governmental officials, regulators and legislators, whilst at the organizational field level, are industry leaders, labour unions and external consultants may have significant influence, whilst at the organizational level, managers and workers may be the primary actors at the organizational level. Consistent with structuration theory where structures are both enabling and constraining, the Dillard et al., (2004) framework recognizes that the ability of any individual or agent to contribute to the institutionalization process is dependent upon a variety of factors.

At each of the three levels, Dillard et al., (2004) represent Weber’s axes of tension, representation, rationalization and power as the dimensions of structuration, signification, legitimation and domination. Dillard et al., (2004) argue that the three axes of tension constitute the context within which institutional theory operates. Structuration theory highlights that all social practices involve the elements of signification, legitimation and domination (Giddens, 1979), with the result that signification is implicated in both legitimation and domination structures (Macintosh, 1994). That is, there is an interrelationship between structures of signification, legitimation and domination through the modalities of structuration, that is, normative rules are embedded in interpretive schemes whilst interpretive schemes are allocative and authoritative resources. The Dillard framework recognizes this interrelationship through the recursive institutionalization process as the political and economic systems (PE) use symbolic sense-making criteria (CPE), or signification structures, in articulating and instituting legitimate norms and practices, legitimation structures (Dillard et al., 2004). In summary, there is an inter-relationship between structures of signification, legitimation and domination within environmental and economic regulatory bodies and government
departments at the political and economic level. Because different regulatory bodies and government departments may set forth alternative social, economic and political criteria as legitimating (Dillard., et al., 2004), or competing and alternative structures of signification, legitimation, and domination, a structural contradiction, which is where structural principles operate in terms of one another but yet also contravene each other (Giddens, 1984; Boland, 1993) can exist. In addition, as part of the recursive institutionalization process, innovative practices at the organizational level may modify and result in new organizational field practices and criteria, which will also influence the political and economic system criteria (COPE), by either supporting, modifying or eliminating the norms and practices articulated by powerful interest groups (Dillard et al., 2004).

The organisational field criteria provides the legitimation basis for legitimate operating practices at the organizational field level, which in turn provides the legitimating and regulative base for actions at the organisational level (Dillard et al., 2004). Within the organisational field, the three dimensions of structuration are represented as (1) legitimating grounds for industrial regulations, norms, and practices (legitimation); (2) representational schema that reflect the practices that result from the political and economic criteria being translated into the industry context (signification); and (3) the domination perspective which refers to the institutions within the organizational field that control and allocate resources (Dillard et al., 2004).

At the organisational level, the Dillard et al., model distinguishes between innovators (I) and late adopters (LA) (Dillard et al., 2004). Innovators are those organizations that develop new organizational practices within the boundaries of the organizational field practices, whilst late adopters are those organizations that adopt the practices of the innovator organizations (Dillard et al., 2004). Dillard et al., (2004) argue that innovative organizational practices will originate at the organization level by reflexive and knowledgeable agents, though enabled and constrained by the higher level parameters. These agents will be motivated by a sense of ontological security. For example, Buhr (2002) observed that the production of an environmental report may be due to the motivation to create and recreate a new sense of ontological security because of the belief in a legitimation gap. The recursive aspect of the institutionalization process through the duality of structure enables innovative practices at the organisational level to modify the set of legitimate practices (POF) and criteria (COF) in the organization field by reinforcing, revising or eliminating extant practices, which in turn will also influence the political and economic system criteria (COPE), either supporting the norms and practices articulated by the powerful interest groups, modifying
them, or eliminating them and thereby affecting the resource allocation process within a society and the recognized social order (Dillard et al., 2004).

The actions of the late adopters are consistent with the principles of mimetic isomorphism. That is, the practices of the late adopters are legitimated by both the success of the innovator’s practices and the organizational field practices and criteria (Dillard et al., 2004). For example, mimetic adoption of environmental management standards is likely to be driven by uncertainty as to how to tackle perceived environmental problems and the wish to emulate an established and effective system (Schaefer, 2007a), whilst sustainability reporting is a mimetic process because organizations imitate their peers (Larrinaga-González, 2007), such as the accountants at the VRA, who spent periods at Ontario Hydro in Canada (Rahaman et al., 2004). Within the public sector generally, the impact of New Public Management (NPM) has resulted in the adoption of practices such as accrual accounting for the purpose of making the government objectives and processes close to those of the private sector (Guthrie, 1998). Within the UK, the privatized water utilities sought to gain legitimacy by emulating private sector customer service (Ogden & Clarke, 2005).

At the organizational level, Dillard et al., (2004) argue that as part of their framework, if structures of signification and legitimation are not interrelated with structures of domination, the associated interpretive schemes and normative rules will be discontinued. Likewise, within the organizational field, there must be an interaction of rules and resources and if one element or dimension of structuration is lost, deinstitutionalization takes place (Dillard et al., 2004). This reproductive interaction is a result of human agents, motivated by a sense of ontological security, engaged in the reflexive monitoring of action at the practical level of consciousness. This is how structuration theory “specifies the “hows” of the institutionalization process” (Dillard et al., 2004, p. 521). Institutions comprise interacting structures of signification, legitimation and domination whose reproduction by agents in routine situations through the duality of structure sustains these institutions. Once this interrelationship is no longer evident as a result of a structural contradiction, deinstitutionalization takes place. With respect to decoupling, Dillard et al., (2004) link structuration theory to institutional theory by explaining that structures of signification, legitimation and domination are socially constructed, do not require justifications based on the rationality of actions, therefore enabling the modalities of structuration to incorporate expectations and myths.

In summary, Dillard et al., (2004) argue structuration theory provides a theoretical representation of the primary dynamics of institutional theory and that it not only describes the primary context dimension but also provides the dynamics for institutional change. That is, institutions are
manifestations of mutually reinforcing signification (representation) and legitimation structures (values and norms), and are reflected and sustained over time by the allocation and accumulation of resources (domination structures) associated with their enactment by agents (Dillard et al., 2004).

3. Research methodology

In order to examine how, and to what extent did the processes of institutionalization, transposition and deinstitutionalization of sustainable development practices take place within the social context of a publicly owned water business, a single longitudinal case study, comprising interviews undertaken in 2000/1, 2008, 2009 and 2010 of a Victorian non metropolitan regional water authority.

The research site was the Water Board Corporation (WBC), a Victorian regional business. There are 19 state-owned water businesses in Victoria, of which 16 are governed by the Water Act 1989 (Vic) (DSE, 2009). These 19 state owned businesses report to the State Government of Victoria, Australia (DSE, 2009). Of the 19 water businesses, three water businesses supply retail and sewerage services to the Melbourne metropolitan area and were established under the Corporations Act 2001 (Cth) whilst the remaining water businesses were established under the Water Act 1989 (Vic) (DSE, 2009).

WBC is one of the largest water corporations outside of the capital cities within Australia. It provides water and sewerage services to more than 270 000 permanent residents over 8100 square kilometres. Its population and therefore customer base increases by more than 195 000 to 469 000 during holiday periods. WBC’s asset base of approximately $1 billion includes more than 5000 kilometres of pipes, 10 major reservoirs, 10 water treatment plants and nine water reclamation facilities (WBC, 2007). In addition, it is a major employer of operational, engineering, strategic planning, financial and administrative specialists (WBC, 2007), evidence of a discourse of professional groups (Lapsley, 2008).

In 2001, the research questions focused on the classification and allocation of environmental costs within the MAS at WBC, the impact of cost allocation and classification on the performance measurement system at WBC and the effectiveness of the MAS for decision making with regard to effluent treatment. The primary forms of data collection for the first phase comprised semi-structured interviews and documentary evidence. Semi-structured interviews were undertaken with one senior and three middle management representatives whose responsibilities included financial accounting, management accounting, the EMS and capital budgeting. The interviews were
undertaken between October 2000 and August 2001 and were mostly tape recorded and transcribed.

The second phase of the longitudinal study took place between 2008 and 2010. For the second phase of the research, the data was recast within the Dillard model. This was not difficult as the results for the first phase were consistent with NIS. The influence of the political economic level upon was evident in the interviews through reference to the roles of the Council of Australian Governments Water Reform Framework, the EPA, the Department of Natural Resources and the environment, specifically the Minister for Environment and Conservation, the Water Act 1989 and the Financial Management Act 1994. The organizational field, the Victorian water industry covers the metropolitan and regional sectors of the State. All Victorian water businesses are State Government Business Entities (GBEs) and are guided by skills based Boards of Directors.

Major changes to the water industry occurred in the late 1980s and early 1990s resulting in the number of water authorities being reduced from 400 to 120, which was quickly followed by further changes in 1994 with the number being reduced further to 24 water businesses across the State.

Interviews for the second phase of the research were undertaken in 2008, 2009 and 2010. The primary forms of data collection for the second phase comprised semi-structured interviews and documentary evidence. In February and March 2008, four semi-structured interviews were undertaken with one senior and two middle management representatives at WBC whose responsibilities included financial accounting, management accounting, economic regulation and pricing (the management of relationships with the Essential Services Commission (ESC)), strategic planning and sustainability (EMS, capital budgeting, environmental regulation).

In 2009 and 2010, interviews were undertaken with representatives from WBC as well as representatives from organizational field bodies such as the Victorian Water Industry Association and the Water Services Association of Australia. In addition, interviews were undertaken with representatives from organizations at the Political Economic level such as the Department of Sustainability and the Environment, the Department of Treasury and Finance, the Essential Services Commission and the Environment Protection Authority. A total of 16 interviews were undertaken in 2009 and 2010. Between 2001 and 2010, a total of 24 semi-structured interviews were undertaken with representatives from the organization, the organizational field and the political economic level. The interviews were tape recorded and transcribed.
4. Making sense out of a story of environmental compliance combined with NPM in 2001

In 2001, the political and economic level for the Victorian water industry comprised the National Competition Policy and the COAG Water reform framework, the Environmental Protection Authority, the Department of Natural Resources and the Environment and the Minister for Environment and Conservation. The specific legislation enacted at the political and economic level that affected the operations of WBC was the Financial Management Act 1994, the Water Act 1989 and the Environment Protection Act 1970 as well as the Corporations Law. Each of these organisations and frameworks established norms and values for the Victorian Water Industry which were codified in the respective acts of parliament and regulations. In effect, these are modalities by which structures of legitimation are reproduced. The Victorian Auditor General’s report into the Victorian Non metropolitan water authorities observed that there was confusion and lack of clarity with regard to the regulatory regime under which authorities operate and that there is little financial incentive for water authorities to practice water conservation (VAGO, 2000).

According to Dillard et al., (2004) the dimensions of structuration at the political and economic level are as follows: (1) legitimating grounds for norms and values as well as their codification in laws and regulations (legitimation); (2) representational schema associated with the political and economic systems (signification); and (3) the institutions that control and allocate resources (domination). The laws and regulations established at both a state and commonwealth level contain modalities that enable agents within parliamentary and regulatory bodies at the political and economic level to simultaneously reproduce structures of signification, legitimation and domination.

4.1 Political and economic level

4.1.1 The COAG Water Reform Framework

In 1994, the Council of Australian Governments (COAG) recognised that action needed to be undertaken to arrest the natural resource degradation resulting in part from water use and that a package of measures was required to address the economic, environmental and social implications of future water reform (NCC, 1999b). This was as a result of considering a report from the COAG Working Group on Water Resource Policy, chaired by Sir Eric Neal, which outlined a strategic framework for the efficient and sustainable reform of the Australian water industry. This is an example of agency, specifically the Prime Minister of Australia, and the Premiers and Chief Ministers of the State and Territory governments, as well as members of the working group on water resource policy, acting at the discursive level of consciousness, and recognizing the need to undertake reform of the water industry in Australia in order to address its environmental impacts. Motivated by a
sense of ontological security, the COAG members decided to adopt a water reform framework for the purpose of achieving an efficient and sustainable water industry (NCP, 1999). The strategic framework recognised the diverse structures that existed across the water industry while providing an integrated approach to water resource management (NCP, 1999). The strategic framework was an outcome of the Hilmer Report, which recommended the adoption of inter-governmental agreements for the structural reform of State and Territory Government owned businesses (Commonwealth of Australia, 1993). In 1995, COAG linked jurisdiction implementation of the water reforms to the National Competition Policy (NCP).

The legitimating grounds, or norms and values, of the water reform framework were as follows: (1) pricing reform based on the principles of consumption-based pricing, full-cost recovery and removal or publication of subsidies and cross-subsidies; (2) implementation of water allocations for the environment as a legitimate water user; (3) the structural separation of the roles of service provision from water resource management, standard setting and regulatory enforcement; and (4) future investment in new rural schemes or extensions to existing schemes being undertaken only after appraisal indicates it is economically viable and ecologically sustainable (NCP, 1999).

The representational schema of the water reform framework covered the following areas: (1) cost reform and pricing; (2) institutional reform; (3) water allocations and trading; (4) environment and water quality; and (5) public consultation and education (NCP, 1999). Within cost reform and pricing, the assessment process was concerned with: (a) urban full cost pricing; (b) urban consumption based pricing; (c) Removal of cross-subsidies; (d) Community Service Obligations; (e) Rate of Return; (f) Assessment of economic viability and ecological sustainability of rural schemes; (g) Devolution of management of irrigation schemes (NCP, 1999). The assessment process for institutional reform was concerned with the following criteria: (a) separation of functions; (b) commercial focus for metropolitan service providers; (c) Participation in performance monitoring and benchmarking arrangements (NCP, 1999). The assessment process for water allocations and trading was concerned with the following criteria: (a) comprehensive systems for water entitlements; (b) allocations for the environment; and (c) arrangements for water trading (NCP, 1999). The assessment process for environment and water quality was concerned with the following criteria: (a) integrated resource management; and (b) National Water Quality Management Strategy (NCP, 1999). In summary, these are the interpretive schemes that agents within the National Competition Council would use in order to reproduce structures of signification associated with the COAG water reform framework.
The domination perspective at the political and economic level refers to the institutions that control and allocate resources (Dillard et al., 2004). In April 1995, the National Competition Council (NCC) was charged with assessing the implementation of the COAG water reform framework (NCP, 1999). The NCC is responsible for interpreting technical matters in the strategic framework for heads of government as well as assessing each state and territory jurisdiction performance with regard to implementing the COAG water reform framework (NCP, 1999). The representational schema, or the signification structure, is the criteria each which the NCC assesses the performance of each state and territory government with regard to the implementation of the water reform framework. The NCC provides Heads of Government with an assessment document which contains all relevant elements of the strategic framework and the NCC’s interpretation of commitments (NCP, 1999).

A central element of the Dillard framework which relates to structuration theory is the interrelationships between the different structural types. The norms and values (legitimation) of the COAG water reform framework were embedded in the representational schema (signification) of the COAG water reform framework. Assessment of the implementation of the COAG water reform framework (domination) was based upon the signification structure which communicated the norms and values, or legitimation structure, of the water reform framework.

The key agents who drew upon these modalities of structuration and therefore simultaneously reproduced structures of signification, legitimation and domination associated with the COAG water reform framework were COAG representatives and NCC representatives. The structures of signification, legitimation and domination were therefore an unintended consequence, or a condition of action of the COAG and NCC representatives.

The COAG water reform framework package was part of an agreement by all Australian governments to establish a National Competition Policy (NCP) for Australia (NCC, 1998). The NCP established principles in the areas of: (1) prices oversight of government business enterprises (GBEs); (2) competitive neutrality policy and principles; (3) structural reform of public monopolies; (4) legislation review; and (5) access to services provided by significant infrastructure facilities (NCC, 1998). These principles included objectives relating to: (1) the efficient allocation of resources; (2) the corporatisation of GBEs; (3) the imposition of regulations on GBE’s of which private sector businesses are normally subject to; and (4) a review of the appropriate commercial objectives for a public monopoly (NCC, 1998). The NCP, and therefore the COAG water reform framework was based upon the principles of New Public Management (NPM). On February 27, 1998, agency, specifically
the Agriculture and Resource Management Council of Australia and New Zealand endorsed a report by the Expert Group on Asset Valuation and Cost recovery definitions which outlined the preferred approach to pricing to ensure that water charges reflect the true economic, including environmental costs of water service provision (NCC, 1998). Specifically the expert group recommended that for a water business to be viable, it should recover externalities, in addition to operational, maintenance and administrative costs (NCC, 1998, p.112). This is an example of agents, motivated by a sense of ontological security, recognising the need that water prices incorporate environmental costs.

4.1.2 The Department of Natural Resources and the Environment

In 2001, the Department of Natural Resources and the Environment (DNRE), specifically the Minister for Environment and Conservation, was responsible for pricing functions, customer service functions, resource allocation functions and drinking water functions (DNRE, 2000). This oversight role involved the following: (1) approval of annual business plans and monitoring performance against those plans; (2) reviewing and setting prices; (3) monitoring performance against prescribed performance indicators; and (4) managing compliance with the Water Act 1989 (VAGO, 2000).

In 2001, the Victorian NMU’s were required under a Ministerial Direction to provide a performance report as part of the report of operations in their annual report (VAGO, 2000). This performance report covered the following five performance areas: (1) customer service; (2) water management; (3) environmental management; (4) commercial practices; and (5) corporate governance (VAGO, 2000). Environmental management related to the collection of wastewater and processing it in a form suitable to discharge to the environment, or for reuse (VAGO, 2000). The performance report included the following 12 reported performance indicators (RPIs): (1) Long-term profitability; (2) Owner’s investment; (3) Long-term financial viability; (4) Liquidity and debt servicing; (5) Movement in real service prices; (6) Operating efficiency; (7) Reliability of supply; (8) Reliability of wastewater collections services; (9) Bacteriological quality of potable water; (10) Physico-chemical quality of water; (11) Quality of wastewater disposal; and (12) Waste management for wastewater (VAGO, 2000). The environmental management performance indicators were therefore (1) Reliability of wastewater collections services; (2) Quality of wastewater disposal; and (3) Waste management for wastewater.

The environmental management performance indicators were modalities that enabled the Minister for Environment and Conservation and agents within the DNRE to simultaneously reproduce...
structures of signification, legitimation and domination associated with environmental management through the duality of structure.

The legitimating grounds, or norms and values, that were embedded in the environmental management performance indicators were contained in the performance objectives for environmental management that was established by the Victorian Auditor General’s Office performance audit covered Victoria’s 15 non-metropolitan urban water authorities (VAGO, 2000). The performance objectives described the key target outcomes in each performance area and were developed as the basis for analysing actual performance (VAGO, 2000). The performance objectives for environmental management and their associated rationale were as follows:

Table 1: Environmental Management objectives as established by the Victorian Auditor General’s Office

<table>
<thead>
<tr>
<th>Performance objective</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Discharge to the environment or reuse wastewater and its by-products (biosolids, gas, odour and noise) in accordance with government requirements</td>
<td>The meeting of EPA wastewater treatment licence requirements is a statutory obligation of NMUs.</td>
</tr>
<tr>
<td>• Increase level of reuse</td>
<td>EPA wastewater treatment licences require NMUs to maximise reuse of treated wastewater and by-products, including biosolids and combustible gases.</td>
</tr>
<tr>
<td>• Minimise wastewater system overflows and their environmental impacts</td>
<td>In order to protect the environment and the community, wastewater overflows should be minimised and managed.</td>
</tr>
<tr>
<td>• Maintain environmental flows</td>
<td>Under bulk entitlement arrangements, approximately half of the NMUs manage environmental water flows from dams. Maintenance of environmental flows is a critical statutory obligation for the protection of downstream ecological systems.</td>
</tr>
</tbody>
</table>


• Manage trade waste to protect NMU systems, the environment and the quality of treated wastewater for reuse

Uncontrolled trade waste has the potential to significantly damage NMU system assets, pollute the environment, create health risks, affect the quality of treated wastewater and by-products for reuse and create major clean-up costs.

Source: adapted from VAGO (2000, p.24).

In summary, the performance objectives were the legitimating criteria that were contained in environmental management performance indicators, specifically: (1) Reliability of wastewater collections services; (2) Quality of wastewater disposal; and (3) Waste management for wastewater. These are the modalities by which agents within the DNRE reproduce structures of legitimation associated with environmental management.

The representational schema, or the symbolic framework associated with the performance report are the objective performance measures of environmental management, specifically (1) Reliability of wastewater collections services; (2) Quality of wastewater disposal; and (3) Waste management for wastewater. These interpretive schemes are the modalities by which the Minister for Environment and Conservation and agents within the DNRE reproduce structures of signification associated with environmental management.

The domination perspective at the political and economic level refers to the institutions that that exercise primary control over resources (Dillard et al., 2004). The DNRE and the Minister for Environment and Conservation use the environmental management performance indicators as an authoritative resource as they are used by the DNRE to monitor the performance of water businesses against their annual business plans as well as compliance with the Water Act 1989 (VAGO, 2000). Specifically, water businesses are required to report the target specified for environmental performance indicators as per their business plan, actual performance achieved for the year and the variance in % terms (VAGO, 2000). The performance indicators are an authoritative resource that enable agents within the DNRE to reproduce structures of domination associated with environmental management.
The interrelationship between structures of signification, legitimation and domination is evident within the DNRE. When DNRE monitors the environmental performance of water businesses using the environmental management performance indicators, the agents within DNRE simultaneously reproduce structures of signification, legitimation and domination. This is because these performance indicators represent the modalities of structuration in each of these three dimensions.

In 2000, the Victorian auditor general noted that there was confusion and lack of clarity in the regulatory regime under which water authorities operate (VAGO, 2000). In particular, with regard to water conservation, the auditor general noted that there are no regulatory requirements for water conservation by NMUs, and that the main driver for water conservation exists in NMUs where there is a scarcity of water supply and large capital investment is required to augment supply (VAGO, 2000). The result is that those NMUs that are not constrained have little financial incentive to allocate scarce resources to conservation, whilst there is little incentive for NMUs to practise water conservation because revenue is tied to the amount of water sold and reduced usage will reduce the financial performance of the NMU (VAGO, 2000). Agency, specifically, the auditor general, motivated by a sense of ontological security, recognized a gap in the performance reporting framework for water businesses, the absence of water conservation targets. Therefore, the auditor general recommended the introduction of water conservation requirements for nonmetropolitan urban water authorities within an appropriate regulatory regime (VAGO, 2000). With regard to environmental management, the auditor general noted that some reported performance indicators require clearer definitions, such as the indicators for waste management for wastewater, whilst consideration should be given by the Government to improving the consistency and control of trade waste discharged to sewers and regulating liability for damage caused by those discharging waste (VAGO, 2000).

4.1.3 The Environmental Protection Authority

In 2001, the Environment Protection Authority (EPA) was responsible Victorian water industry environment compliance under the Environment Protection Act 1970 (VAGO, 2000). This covered discharges to waterways, oceans and land, as well as air and noise pollution (VAGO, 2000). The EPA regulated NMUs through the issue of operating licences for wastewater treatment plant discharges (VAGO, 2000). The Victorian auditor general observed that the EPA is primarily interested in the environmental impact from the collection, treatment and discharge/reuse of wastewater which includes: (1) the quality of discharge of effluent to the environment; (2) sludge management; (3)
reuse of effluent and biosolids and greenhouse gases; (4) the environmental impact of sewage spills; (5) odour from the collection system and treatment facilities; and (6) noise (VAGO, 2000).

The EPA issues operating licences to each water business for each wastewater treatment plant that they operate in accordance with the Environmental Protection Act 1970. The meeting of EPA wastewater treatment licence requirements is a statutory obligation for NMU’s and they require NMU’s to maximise reuse of treated wastewater and by-products, including biosolids and combustible gases (VAGO, 2000). Each wastewater treatment licence specifies: (1) licence objectives; (2) waste discharge performance limits; (3) discharge and emission requirements; (4) receiving environment monitoring; (5) monthly reporting; and (6) annual reporting\(^{xxx}\). The licence objectives are the legitimating criteria and comprise the following: (a) environmental quality requirements for all segments of the environment shall be met;\(^{,}\) including meeting provisions of the Environmental Protection Act 1970; (b) operations are in accordance with good environmental practice; (c) opportunities are taken to minimise waste and continuously improve environmental performance; and (d) maximisation of reuse of treated effluent and sludge\(^{xxx}\). The representational schema were the waste discharge performance limits, discharge requirements and associated performance indicators as specified in the licence.\(^{xxx}\) The domination perspective refers to the reporting requirements as specified in the licence. Each operating licence requires a water business to submit to the EPA an annual report on the operation of the premises for the last 12 months whilst a monthly report had to be submitted in cases where a water business did not comply with nay condition of the operating licence\(^{xxx}\). The interrelationships are that the legitimating criteria, or objectives, of the operating licences are embedded in the representational schema or performance indicators, whilst the performance indicators or representation schema are the basis of the reporting requirements as the EPA holds the water businesses accountable (domination) on the basis of the performance indicators as stated in the licences.

In 2001, the EPA had strengthened its response to non-compliance in relation to treated wastewater and by-product discharges and sewer overflows whilst the public relations impacts of EPA actions encouraged a positive attitude to environmental management (VAGO, 2000). The Victorian auditor general also recognized that the tightening of the EPA regulatory regime was driving NMUs to improve their asset management practices, due the significant increase in penalties for pollution events (VAGO, 2000).

\[4.1.3\quad \text{Department of Human Services and the Department of Treasury and Finance}\]
In 2001, the Department of Human Services (DHS) was responsible for regulating the NMUs in relation to the health aspects of drinking water under the *Health Act* 1958, the Health (Quality of Drinking Water) Regulations 1991 and the *Fluoridation Act* 1973 (VAGO, 2000). The Department of Treasury and Finance (DTF) was responsible for setting borrowing levels, dividend policies and financial matters under the *Public Authorities (Dividends) Act* 1983, the *Borrowing and Investment Powers Act* 1987 and the *Financial Management Act* 1994 (VAGO, 2000). Performance indicator reporting for the non-metropolitan urban water authorities was introduced by the Victorian Government under the *Financial Management Act* 1994 in 1995 (VAGO, 2000). General Purpose Financial Statements were prepared by non-metropolitan urban water authorities in accordance with the requirements of the *Financial Management Act* 1994 as well as Australian Accounting Standards.

4.2 Organizational field

According to Dillard et al., (2004), the organizational field is made up of the group of organizations which are involved in the production of a particular set of goods and services as well as the related trade associations and industrial experts. The Victorian water industry comprised 19 state-owned water businesses, of which 16 are governed by the *Water Act 1989* (Vic) (DSE, 2009). These 19 state owned businesses report to the State Government of Victoria, Australia (DSE, 2009). Of the 19 water businesses, three water businesses supply retail and sewerage services to the Melbourne metropolitan area and were established under the *Corporations Act 2001* (Cth) whilst the remaining water businesses were established under the *Water Act 1989* (Vic) (DSE, 2009). As explained by Dillard et al., (2004), the signification, legitimation and domination elements of the political and economic level provide the context within which the organizational field is constituted. In 2001, the legitimating criteria for environmental management were the industrial norms, practices and regulations that were embedded in the signification structures at the political economic level and supported by the associated domination structures. These were meeting EPA regulatory requirements as well as the maintenance of environmental flows. These were reflected in the representational schema, or performance indicators, specifically, reliability of wastewater collections services, quality of wastewater disposal and waste management for wastewater. In addition, the EPA wastewater licences require water businesses to implement an environmental management plan (EMP). As part of the EMP, water businesses have to implement an environmental management system (EMS). Water businesses certified their EMS in accordance with the ISO 14001 standards. There are two standards which deal with EMS, ISO 14001:2004, which provides the requirements for an EMS, and ISO 14004:2004 which gives general EMS guide. Bouma and Kamp-Roelands (2000)
observe that ISO 14001 provided a guide to the development of EMS and quality assurance concerning the appropriateness and effectiveness of an EMS and states that a company should establish procedures for collecting and documenting the information needs of external stakeholders'. Therefore, in 2001, the ISO 14001 standards and the EPA operating licences provided the stocks of knowledge in regard to environmental management for agents at the organisational level and were a source of ontological security. That is, agents would have faith in the modalities of structuration as contained in the ISO 14001 standards.

In 2001, the legitimating criteria for financial management within the Victorian water industry were grounded in the principles of NPM (Hood, 1995), specifically modernisation reforms that, by 2001, had entered the strategic phase (English and Guthrie, 2001). The strategic phase, and prior to it, the marketization phase, placed an emphasis on decision making being driven by fully-costed output models, the introduction of several financial management acts, such as the Financial Management Act 1994, the adoption of accrual accounting and the allocation of funds to departments based on outputs delivered in accordance with fully-costed budget targets (English & Guthrie, 2001).

The representational schema for financial management were the following financial performance indicators as required by a Victorian Ministerial Direction: (1) Long-term profitability; (2) Owner’s investment; (3) Long-term financial viability; (4) Liquidity and debt servicing; (5) Movement in real service prices; (6) Operating efficiency (VAGO, 2000). As a result of the COAG water reforms at the political economic level, Victorian water business implemented consumption based-based pricing and full-cost recovery, and the reduction and elimination of cross-subsidies (NCC, 1999), as well as accrual accounting (English and Guthrie, 2001; Guthrie, 1998).

The domination perspective refers to the resource controlling groups (Dillard et al., 2004). Consistent with Dillard et al., (2004) notion of the organizational control hierarchies, the organizational framework for a regional water business comprised divisions such as business performance, customer services, strategy and technology and water systems, whilst the organizational hierarchies comprised operational, engineering, strategic planning, financial and administrative specialists. The organizational framework for a metropolitan water business comprised divisions such as research and technology, commercial services, information technology, communications, pricing and strategy and human resources, whilst the organisational hierarchies also comprised operational, engineering, strategic planning, financial and administrative specialists. With respect to environmental management, it was strategic planning specialists who controlled the resources with respect to environmental management. Specifically, strategic planning departments
and their respective managers within water businesses were responsible for operating environmental management systems. The EMS contained the modalities of structuration for environmental management that enabled the reproduction of structures of signification, legitimation and domination. For the purposes of financial management, financial specialists were responsible for financial reporting as well as the operation of the management accounting system (MAS). The MAS contained the modalities of structuration for financial management that enabled the reproduction of structures of signification, legitimation and domination.

The Victorian Water industry also comprised industry associations, specifically the Victorian Water Industry Association. The Victorian Water Industry Association was established in January 1996 and is the peak body representing water utilities from across the metropolitan, non-metropolitan urban and rural sectors of the Victorian water industry (VWIA, 2001). In 2001, VicWater published its annual *Urban Water Review* detailing the performance of the urban retail sector on key economic and environmental outcomes including financial performance information and water and wastewater quality compliance data and was in the process of developing social performance indicators to assist with triple bottom line reporting within the Urban Water Review (VWIA, 2001).

### 4.3 Organizational level

The organizational field for the Victorian water industry in 2001 provided the context within which structures of signification, legitimation and domination with regards to environmental management and financial management were reproduced within a Victorian water business, WBC, in 2001. The organizational structure for WBC is illustrated in Appendix 1. The strategic direction of WBC, and therefore the basis of its normative rules and structure of legitimation, was based upon its mission statement, which was that WBC “exists to provide water, sewerage and environmental management services in an efficient, cost effective and environmentally responsible manner, meeting the needs of our customers in an increasingly competitive business environment” (WBC, 2000). Based upon its mission statement, WBC’s strategic direction in 2001 was based upon the following: (1) understanding and satisfying the needs of customers in a competitive and business focused manner; (2) maximising business efficiency through the use of quality principles and continuous improvement of work practices and processes; (3) improving the authority’s commercial position by providing a greater emphasis upon the cost of services supplied to the customers; (4) improving the quality and efficiency of all products and services; (5) measuring and benchmarking business performance to ensure customer requirements are met at the lowest possible cost and that both financial and physical targets are achieved; (6) maximising asset utilization and achieving the required rate of return on assets by encouraging innovation and creativity; (7) undertaking works in
an environmentally sensitive manner; (8) allocation of resources to best meet customer and environmental needs and business targets; (9) continuing to review the organisational structure and work requirements to achieve staffing levels which optimise services to customers and contribute to business efficiency; (10) developing all employees through leadership, education and training; (11) developing and maintaining a culture based on teamwork, trust and cooperation and encouraging pride in our workplace; and (12) improving the safety of the work environment and compliance with all legal, statutory and policy requirements (WBC, 1999). These are the norms of organisational behaviour for WBC which will be translated into their performance measurement systems. The strategic direction was translated into the following key result areas: (1) customer services; (2) business performance; (3) water systems; (4) strategy and technology; (5) human resources; and (6) communications (WBC, 1999). The interrelationship of structures of signification, legitimation and domination is evident as the strategic direction (legitimation) is linked to the key result areas and performance indicators (signification), which in turn is the basis of the performance measurement and control system (domination).

4.3.1 Environmental management

In 2001, WBC’s strategy and technology strategic direction comprised the innovation and technology strategy and the environment strategy (WBC, 1999). The objective of the environment strategy was to meet all legislative requirements, act as a good corporate citizen by complying with the terms and conditions of WBC’s licences and by continually improving environmental performance across all planning, operations and support activities (WBC, 1999). The key result area, environmental management, seeks to ensure the successful operation of the business by complying with environmental requirements, which was translated into the following performance indicators: 1. water consumption as a % of safe annual yield; 2. Compliance with EPA licences; and 3. % of EMS system improvement notices closed out on time (WBC, 1999). These are the modalities by which agents within WBC simultaneously reproduce structures of signification, legitimation and domination associated with environmental management in routine situations through the duality of structure process. These structures are ‘virtual’ and are the rules and resources that bind environmental management practices into the ‘visible’ environmental management system (EMS), which as a result, is a source of ontological security to agents within WBC. These structures are the unintended consequence of the actions of agents within WBC in routine situations.

According to the Dillard et al., (2004) framework, organizations at the organizational level are considered to be either innovators or late adopters, where the practices of the innovators are
function of either the practices or criteria of the organisational field, whilst the late adopters adopt or mimic the practices of the innovators. WBC was an innovator in terms of being the first water authority in Australia to attain certification of its EMS to the international standard ISO 14001 in November 1998 (WBC, 2001a). This was because there was a recognition by agents within WBC, acting at the discursive level of consciousness and motivated by a sense of ontological security, to demonstrate that they were translating strategic objectives and vision with regard to environmental management into decision making at the organisational level as well as the need to make environmental improvements:

“We were looking forward, and we could see that issues with environment were important to people, and it is one of showing the organization to be seen to be independently audited and being certified that we were actually complying with what we were saying we were doing for the environment. So I think that it was an issue we thought worth doing. And I think also at the time we had to look at the various aspects of the organization where could we make an improvement” (ST – 2010).

Therefore, the actions of innovative organizations, in this instance WBC, are the result of “knowledgeable, reflexive human agents” (Dillard et al., 2004, p.520) at the organizational level who are motivated by a sense of ontological security, initiating organizational change in a critical situation.

Subsequent to its introduction by WBC in 1998, the EMS contained the modalities of structuration that enabled agents within WBC to simultaneously reproduce structures of signification, legitimation and domination in routine situations. Specifically, the EMS was a source of ontological security that WBC was achieving its strategic direction:

“The environmental system sets targets. There’s targets within the environmental management plan that are very much linked to the corporate plan, so we’re all heading in the same direction”. (SP - 2001).

In addition, to the EMS, the EPA’s guidelines for wastewater reuse requires WBC to implement an environmental improvement plan for all wastewater reuse projects:

“The EMP, the environmental management plan under that, has really listed our significant environmental aspects, and tried to provide drivers to improve our performance in those areas” (SP – 2001).

The EIP requires a regular monitoring program with the data presented in a periodic report for the EPA (WBC, 2001b). The monitoring program is a source of routinized behaviour within WBC which is a source of ontological security because, as explained by Giddens (1984, p.282) “in the enactment of routines agents sustain a sense of ontological security”. However, whilst the routinised behaviour resulting from the EMS was a source of ontological security, the manager responsible for the EMS resisted the use of cost, or financial information for EMS purposes because he was comfortable with
the existing routines resulting from the reproduction of structures of signification, legitimation and domination associated with the modalities of structuration contained within the EMS:

“I think we’d be saying what’s the benefit to the business really and there’s probably not a lot of benefit to our business in doing that. We’ve still got to operate the treatment plants and we made a decision to build a certain type of treatment plant and we run that treatment plant as efficiently as possible. And so what would we use that information for, and I don’t know that we would be able to use that information in making any better decisions”. (SP – 2001)

According to Granlund (2001, p.160), “people fundamentally resist change because they feel comfortable with routines, which in turn enhance the feeling of ontological security”. Specifically, the routines associated with the EMS were a source of ontological security to the agents within WBC that WBC was complying with EPA regulations. That is, agents at WBC had faith in the modalities of structuration associated with the EMS in terms of complying with EPA regulations:

“Currently, it would only be compliance. At a strategic level, it would be compliance with regulatory requirements. The EPA has numbers that we have to comply with, absolute numbers, and we say we want to comply with that, our target is 99% compliance” (SP – 2001)

However, the manager’s sense of ontological security made the manager recognize that WBC has to manage environmental impacts beyond those covered by EPA licences:

“The EPA licences really only relate to the treatment plants, and so, to say that we are only focused on compliance there is probably not telling the whole story. We have, we recognise that the collection systems has the potential to have a larger impact upon the environment than the treatment plants, so therefore, there is a lot of effort spent in to try and minimise any of the potential environmental impacts from phases of the collection systems” (SP – 2001)

In summary, the EMS was a source of ontological security to the agents within WBC because the agents had faith in the modalities of structuration within the EMS that they were complying with EPA regulations, whilst the agents sense of ontological security made the manager recognize the need to manage environmental impacts beyond those covered by EPA licences . Macintosh and Scapens (1990) argued that management accounting systems were a source of ontological security because of their regular reporting routines. At the practical level of consciousness, agents within WBC relied upon their stocks of knowledge, that is the interpretive schemes within the EMS, about how to act in routine situations. The structures of signification, legitimation and domination associated with the EMS within WBC had no existence independent of the stocks of knowledge of agents within WBC.

4.3.2 Capital investment

Capital investment is a key result area within WBC. Its strategic objective, or normative rule, was to maintain the delivery of high quality water and sewerage services through capital investment in infrastructure and systems (WBC, 1999). The modalities of structuration
associated with this strategic objective were the following performance indicators: (a) capital expenditure on renewals and major refurbishment works; (b) capital expenditure on new and enhanced works; and (c) capital works progress against program (WBC, 1999). These modalities enabled agents within WBC to simultaneously reproduce structures of signification legitimation and domination. These performance indicators were interpretive schemes that enabled agents within WBC to make sense of capital expenditure programs, signification, normative rules that embedded the strategic objective of WBC into performance measures, legitimation and an allocative and authoritative resource that were used to allocate finances to capital projects and against which agents within WBC were held accountable.

4.3.2.1 Capital Works Investment Plan

Prior to 2001, the then Chief Executive of WBC, acting at the discursive level of consciousness and motivated by a sense of ontological security, recognized the need for WBC to incorporate environmental issues within the capital expenditure decision making process:

“our managing director, our previous managing director, his determination to have a triple bottom line strategy for all parts of our business. He really pushed us down that path because previously we would have just said, this project is going to cost X dollars and people said, ok, that’s fine. But he wanted us to take a step further and say what’s the environmental impact? So don’t just tell me or well, we’re going to have to chop down 400 yellow gums, which we did once which was a major environmental disaster for us”. (MW – 2008).

As a result of actions of the chief executive officer, the incorporation of environmental issues within WBC’s capital expenditure process became a routine within WBC and therefore a source of ontological security for strategic planning staff in making capital investment decisions:

“It’s certainly a part of the culture. Yeah. Yeah, it is. And our planning people, our strategic planning people who are in the main environmental engineers, they use that as their backbone of trying to help them make decisions. Environmental costs are traditionally a long term decision issue. They are not short term, very rarely”. (MW – 2008)

However, whilst environmental issues were incorporated into the capital expenditure decision making process, they were classified by WBC as unquantifiable costs and benefits. Within their capital works investment plan manual, WBC explained that where costs and benefits cannot be directly measured or valued, they should be listed and quantified where practical, making it clear to the decision make that they are additional factors to be taken into account (WBC, 2000):

“environmental costs, we do include them as part of the analysis, it’s part of the capital works manual. It’s pretty difficult to actually quantify both environmental and social costs and I think that’s pretty much a major issue for all government trading enterprises really” (SD – 2001).
“the improved outcomes are identified but not quantified” (ID – 2001).

Where changes to the changes to the environment could be directly attributed to a capital project, they were to be classified as significant direct costs and benefits external to the organisation and included in the capital expenditure decision making process (WBC, 2000). Capital projects are reviewed by the Capital Works Investment Plan Committee at WBC
(WBC, 2000). These agents evaluate project proposals using the following interpretive schemes (signification), NPV, which embodies the normative rules (legitimation), the economic evaluation principles as stated in WBC’s Capital Works Investment Plan Manual, which as an authoritative resource (domination) requires that all capital expenditure project submissions adhere to the Capital Works Investment Plan (WBC, 2000). Once a capital project is accepted, a quarterly monitoring procedure is undertaken to ensure expenditure is in line with budget forecasts (WBC, 2000). The modality of structuration, a quarterly expenditure form, is an interpretive scheme that enables agents within the strategic planning branch at WBC to reproduce a structure of signification to assess whether or not capital expenditure is in keeping with budget forecast. As a normative rule, the quarterly expenditure form embodies the principles of the capital works investment plan, whilst as an authoritative resource, agents within the Strategic Plan Branch have the responsibility of monitoring the capital works investment plan through the expenditure forms to ensure that capital expenditure is in keeping with budget forecasts (WBC, 2000). Therefore the quarterly monitoring procedure contains the following modalities of structuration, the quarterly expenditure form and the budget variation request forms, which enable agents within the strategic planning branch at WBC to simultaneously reproduce structures of signification, legitimation and domination. This process is part of a routine at WBC, the quarterly monitoring procedure, which is a source of ontological security to the agents within WBC that capital expenditure projects are being undertaken in accordance with capital works investment plan.

4.3.3 Business efficiency

In 2001, one of WBC’s strategic directions was maximising business efficiency through the use of quality principles and continuous improvement of work practices and processes (WBC, 1999). The emphasis upon efficiency is evidence of the influence of “modernisation” reforms at the political and economic level within the Victorian water industry, specifically the managerialist phase (Broadbent and Guthrie, 1992). The normative rule of efficiency was established at the political economic level, specifically the management accounting changes of NPM that were directly geared to efficiency (Broadbent and Guthrie, 2008). The normative principle of efficiency was established at the political and economic level as a result of NPM reforms, which in turn were translated into practices at the organizational field level. WBC’s values of business efficiency were a function of the criteria of the organizational field.

The strategic direction of business efficiency was translated into the business performance strategic direction which comprised two components, the business planning strategy and corporate services (WBC, 1999). The objective of the business planning strategy was to assist the achievement of WBC’s business objectives by controlling funds, ensuring effective resource utilisation, and enhancing the efficiency of the authority through the application of continuous quality improvement in all products and services (WBC, 1999). Business performance contained the following key result areas: 1. Managing financial expenditure; 2. Managing work hours; and 3. Profitability and debtor management (WBC, 2002). Each of these key result areas contained two performance indicators, which were modalities that enabled agents within WBC to simultaneously reproduce structures of signification, legitimation and domination associated with business efficiency as part of the duality of structure. These performance indicators included managing recurrent expenditure in accordance with budget, managing capital costs in accordance with budget, managing recurrent revenue in accordance with budget and return on total assets (WBC, 2002).
4.3.5 Financial Management Act and environmental costs

Apart from the performance measurement system, a second key modality of structuraion within WBC was the operating statement for each segment within WBC. As a result of directions made at the political economic level, specifically by the Minister for Environment and Conservation in accordance with Section 51 of the Financial Management Act 1994, WBC was required to provide separate segmented financial data for its wholesale operations as well as its retail business function (WBC, 2000). Its retail segment is responsible for the collection, treatment and supply of high quality water as well as the collection, treatment and disposal of sewerage (WBC, 2000).

A routine procedure for agents within the Business Planning and Reporting Department at WBC was to trace direct costs to the departments within each business segment at WBC and allocate overhead, or indirect, costs to each wholesale and retail business segment for the purpose of preparing a segmented operating statement for each segment within WBC:

“Our corporate planning requirements from what the minister wants to know, that includes segmenting our business into its key operations which are what we would call would be: retail and wholesale operations which is the broken down into retail is broken down into 1 sewer 2 water 3 waterways. So we need to break our information down to that level for external reporting obviously” (MS – 11/7).

Therefore, the routine of preparing the segmented operating statement and the subsequent tracing of direct costs and the allocation of indirect costs was a source of ontological security that WBC was complying with norms of financial reporting established at the political economic level as outlined in the Financial Management Act 1994. Within the organizational field of the Victorian water industry, the social, economic and political values as contained in the Financial Management Act 1994 are translated into financial reporting requirements for the Victorian Water Industry. As a result, the financial reporting practices of WBC and subsequent routines that they entail are a function of the financial reporting requirements within the organizational field. In 2001, the Financial Management Act 1994 contained no requirements for environmental disclosures. Therefore, the ontological security of the accountants within WBC was grounded in reproducing financial structures of signification, legitimation and domination associated with the Financial Management Act 1994.

As observed by Parker (2005), accountants are barely engaged in sustainability reporting developments whilst Gray et al., (2009) believe that accountants’ attachment to rules and procedures will inevitably limit their ability to innovate.

As a result of this routine, private environmental costs were hidden within the segmented operating statement whilst externalities, or societal costs, were not measured or reported:

“The $1000 in between those is an environmental cost it’s a cost the organisation would be wearing to help the environment. We don’t capture that, there is no requirement for us, you can see nowhere in our structure of accounts do we capture information like that.” (MS – 11/7)

“In terms of reporting compliance costs and how much it effectively costs the organisation to report to the EPA, we do not capture costs in that bucket. We don’t actually have a bucket that we would say EPA compliance reporting costs” (MS – 27/8)

For internal decision making as distinct from the external reporting requirements, WBC sought to measure the full cost of its departments:

“It’s a way of apportioning costs across each of these functions to then what we believe to capture a full cost of the function”. (MS – 11/7)
Therefore, staff within the business planning and reporting department at WBC reproduced structures of signification, legitimation and domination based upon the full cost of each of its departments and services:

“To ensure that we believe we are really capturing the costs of functions. It is making everyone more accountable. It’s giving me a real cost of my little part of the business. If we were to go outside WBC, it gives me more an idea of what it would really cost” (MS – 11/7/2001).

Within WBC, measuring the full cost of departments and services was consistent with WBC’s value of business efficiency. Therefore as a structure of legitimation, the full cost of departments and services embodied the value of business efficiency, whilst as a structure of domination, it was an allocative resource that enabled WBC to allocate resources across departments. Finally, as a structure of legitimation, it enabled WBC to make sense of each department in terms of its full cost. The principles of full cost were initiated at the political economic level, specifically the VCA report, which required that the focus for decision making and accountability within the Victorian public sector be driven by a fully-costed output model (English & Guthrie, 2001, p.48). In the U.K., the department of health introduced full-cost pricing for the purposes of simulating the perfect, competitive pricing of neo classical economics as well as to encourage productive efficiency and allocative efficiency (Ellwood, 1996). These principles, established at the political economic level, were subsequently transferred into the practice of measuring the full cost of departments within water businesses at the organizational field level. The practice of WBC of measuring the full cost of its departments and services was a function of practices at the organisational field level.

In addition to measuring the full costs of its departments, WBC implemented business centre service charges, a transfer pricing arrangement which sought to enable departments within WBC to fully recover the costs of providing services between departments within organizations:

“Internally, the reason we allocate charges is to full cost recovery. Business centre charges is what we were talking about earlier. HR would charge each of the branches, they also would get back revenue from each of the branches. So effectively, they are charging on to my branch, giving us the cost, and I would have to pay them. We’ve probably had our business centres in place for five or six years and it just gives us an idea of how costs should be worn in each area”. (MS – 11/7/2001)

Business centre service charges were an interpretive scheme, a structure of signification, that enabled WBC to recover the costs of services provided between departments, as well as being an allocative resource that enabled cost recovery between departments. As a structure of legitimation, it embodied WBC’s value of business efficiency.

Business centre service charges were a method of cost recovery within WBC. The principles of cost recovery were established at the political economic level, specifically the 1994 COAG Water reform package that required water businesses to implement price reform based upon the principles of full cost recovery:

“Full cost recovery, that’s something that came out of COAG. COAG has pushed this cost recovery and removal of cross subsidies and all this stuff, the problem with that is that the pricing structure that we’re able to implement in terms of, we want to introduce peak pricing, is fairly limited in terms of we haven’t got the flexibility in place, from the economic regulator in Victoria, that we are able to implement those sorts of initiatives, I suppose”. (SD – 2001).

The principle of cost recovery, established at the political economic level by COAG, was translated into the practice within the organisational field of water businesses recovering the cost of providing services across departments. WBC’s practice of recovering the costs of services provided across departments was a function of the practices of the organisational field.

Full cost recovery embodied WBC’s value of business efficiency:
"internally, the cost recovery process was driven by an efficiency driver, so we’ve separated some of the services that could be provided externally, things like maintenance and activities, and set them up so they could focus on improving that business activity, benchmark their capacity and make sure they were operating efficiently" (ID – 2001).

Through the duality of structure, agents within WBC fully recovered the costs of services provided between departments through the business centre service charges, an interpretive scheme that was also an authoritative and allocative resource that embodied the organisational norm of business efficiency. This enabled the simultaneous reproduction of structures of signification, legitimation and domination.


In 2001, the political and economic level for the Victorian water industry comprised the National Competition Policy and the COAG Water reform framework, the Environmental Protection Authority, the Department of Natural Resources and the Environment and the Minister for Environment and Conservation. These regulatory and legislative bodies were responsible for establishing the norms and values for the Victorian water industry that were subsequently reflected in the laws, or acts of parliament, as well as regulations that govern the Victorian water industry.

The COAG water reform framework, enacted in 1994, was based upon the following legitimating grounds, or norms and values: (1) consumption based pricing; (2) full cost recovery; (3) removal of cross subsidies; (4) new investment to be based upon economic viability and ecological sustainability; and (5) the structural separation of the roles of service provision from water resource management, standard setting and regulatory enforcement. These norms and values were embodied in the representational schema for the water reform framework which covered cost reform and pricing, institutional reform, water allocations and trading and environment and water quality. The NCC was charged with assessing the implementation of the COAG water reform framework and used the representational schema for the purposes of assessing the performance of each state and territory government in Australia with regard to the implementation of the framework. The interrelationship of structures of signification, legitimation and domination was evident as the norms and values of the water reform framework, such as full cost recovery were embedded in the representational schema whilst the representational schema was the basis upon which the NCC assessed the implementation of the COAG water reform framework.

In 2001, the DNRE were responsible for approving the annual business plans of water businesses as well as monitoring performance against those plans. The performance reporting framework comprised three performance indicators in the area of environmental management. These were the representational schema that agents within the DNRE, specifically the Minister for Environment and Conservation used as interpretative schemes to make sense of the environmental performance of water businesses. They embodied the legitimating grounds, or performance objectives for environmental management and were also used as an authoritative resource by the DNRE as water businesses had to report to the DNRE their performance against these criteria.

The EPA were responsible for regulating the wastewater discharges of water businesses in accordance with the EPA Act 1970. The EPA issued water businesses with wastewater treatment linens which contain licence objectives, or legitimating criteria, waste discharge performance limits, or representational schema, and reporting requirements, or the domination perspective. The objectives, or legitimating criteria, were embedded in the performance indicators, or representational schema which were the basis of the reporting requirements to the EPA, or the domination perspectives. The performance measures, or representational schema, were the modalities of structuration by which agents within the EPA simultaneously reproduced structures of
signification, legitimation and domination associated with the wastewater discharges by water businesses.

The organizational field for Victorian water businesses in 2001 comprised 19 state owned water businesses, of which 16 were governed by the water act whilst the three Victorian retail water businesses were established under the Corporations Act. In 2001, the legitimating criteria for environmental management was meeting EPA regulatory requirements as well as maintain environmental flows, which was reflected in the representational schema relating to wastewater disposal. In addition, the EPA required water businesses to implement an EMP and therefore an EMS, in accordance with ISO 14001 standards. In 2001, the legitimating criteria for financial management within the Victorian water industry were grounded public sector modernisation reforms which by 2001 had entered the strategic phase, which placed an emphasis on fully costed outputs, the adoption of accrual accounting as well as the introduction of the Financial Management Act 1994, with a resulting emphasis upon efficiency, cost recovery, as well as the implementation of private sector management techniques. The legitimating criteria was reflected in the representational schema such as long term profitability, long term financial viability and operating efficiency as well as full cost recovery pricing. The resource controlling groups or the organizational control hierarchies of Victorian water businesses comprised divisions such as business performance, customer services, strategy and technology and water systems. The organisational hierarchies also comprised operational, engineering, strategic planning, financial and administrative specialists. With respect to environmental management, it was strategic planning specialists who controlled the resources with respect to environmental management, as they were responsible for operating the EMS, whilst financial specialists were responsible for financial reporting as well as the operation of the MAS. The organizational field, that is the Victorian water industry, also comprised an industry association, the Victorian Water Industry Association, which was in the process of developing social performance indicators to assist with triple bottom line reporting.

The organizational level comprised a regional water business, WBC. WBC's key result area, environmental management, was translated into two performance measures, compliance with EPA licences and the environmental improvement program. These were the modalities by which agents within WBC simultaneous reproduced structures of signification, legitimation and domination. These virtual structures were a part of the ‘visible’ EMS. WBC was the first water business to certify its EMS to the international ISO 14001 standard because agents within WBC, motivated by a sense of ontological security, recognized the need to translate strategic objectives into decision making. Subsequent to its introduction in 1998, the EMS enabled agents to simultaneously reproduce structures of signification, legitimation and domination associated with environmental management and was also a source of ontological security that WBC was achieving its strategic direction of compliance with EPA licences. Specifically, a routine, the EMS monitoring program , was a source of ontological security. Because the existing routine was a source of ontological security to the manager of the EMS, the use of cost information for decision making purposes with regard to the EMS was resisted. In summary, agents within WBC relied upon their stocks of knowledge, which is the interpretive schemes within the EMS, about how to act in routine situations about environmental management.

A second key result area within WBC was capital investment, whose normative rule was to maintain the delivery of high quality water and sewerage services. This was embedded in the following interpretive schemes or performance indicators, capital works expenditure, capital works against milestones, which were an allocative and authoritative resource that were used to allocate funds to capital projects. The reproduction of structures of signification, legitimation and domination were a part of a routine, the capital expenditure decision making process. The managing director of WBC, motivated by a sense of ontological security, recognized the need for WBC to incorporate environmental information within the capital expenditure decision making process. As a result, the
incorporation of environmental issues within the capital expenditure decision making process became routine. A second aspect of the capital expenditure decision making process was the quarterly monitoring procedure, which was a source of ontological security that capital expenditure projects were being undertaken in accordance with the capital works investment plan.

A third key result area was financial performance which incorporated the norm of business efficiency, evidence of the translation of NPM, specifically modernisation, values at the political economic level into the organizational field criteria and subsequently the strategic direction and therefore normative values of WBC at the organizational level. Financial performance comprised three key result areas, each of which contained two performance indicators, modalities that enabled agents within WBC to simultaneously reproduce structures of signification, legitimation and domination associated with financial performance and therefore efficiency as part of the duality of structure.

As a result of directions by the Minister for Environment and Conservation at the political economic level, WBC was segmented into retail and wholesale operations in accordance with the Financial Management Act 1994. A routine procedure for agents within WBC was to trace direct costs to the departments of each segment and allocate overhead costs to each segment for the purpose of preparing a segmented operating statement for each wholesale and retail segment. This routine was a source of ontological security that agents were complying with the norms of financial reporting as established at the political and economic level through the financial management. As a result of this routine procedure, the ontological security of the accountants within WBC was grounded in the reproduction of financial structures of signification, legitimation and domination in accordance with the Financial Management Act. As a result of this routine, private environmental costs were hidden within the segmented operating statement whilst externalities were not measured or disclosed.

For internal decision making, WBC sought to measure the full cost of each of its departments, which embodied the value of business efficiency, as well as being an allocative resource, whilst it also was an interpretive scheme that enabled WBC to make sense of each department in terms of its full cost. Measuring the “full cost” of each department within WBC was based upon principles established at the political economic level, specifically the VCA report, which was subsequently transferred into the practice of measuring the full cost of departments at the within water businesses at the organisational field level. In addition to measuring the full cost of each department, WBC sought to fully recover the costs of services provided between departments through a transfer pricing arrangement. This was based upon the principle of cost recovery, initially established at the political economic level through the COAG water reform framework, which was subsequently translated into the practice within the organisational field of water businesses recovering the costs of services provided across departments. Through the duality of structure, agents within WBC fully recovered the costs of providing services between departments through business centre charges, a modality of structuration that was an interpretive scheme, an authoritative and allocative resource as well as embodying an organisational norm.

5. **2001 – 2010 Making sense out of climate change and greenhouse gas emissions**

Between 2001 and 2010, the political and economic level within which WBC operated experienced the following changes: (1) the establishment of the national water commission; (2) national greenhouse and energy reporting act; (2) the establishment of the department of sustainability and environment within Victoria; and (3) the establishment of an economic regulatory body, the essential services commission.

5.1 **National Water Commission**
Up until 2004, the NCC was responsible for assessment of each Australian state’s progress with regard to implementation of the 1994 COAG strategic water reform framework. On 25 June 2004, COAG reached an intergovernmental agreement on a National Water Initiative (NWI), which developed and extended the original water reform strategic framework, through the creation of the National Water Commission (NWC), for the purpose of overseeing implementation of the NWI reform program. The establishment of the NWC was a result of agency, specifically representatives of the Commonwealth of Australia and the Governments of New South Wales, Victoria, Queensland, South Australia, the Australian Capital Territory and the Northern Territory, acting at the discursive level of consciousness and motivated by a sense of ontological security, of the need for a new body to implement the NWI (COAG, 2004).

5.1.1 National Water Initiative

In 2004, COAG recognised the need to extend and complement the 1994 COAG water reform framework because of: (1) increase in demand for water; (2) an increased understanding of the management needs of surface and groundwater systems; and (3) an enhanced understanding of the requirements for effective and efficient water markets (COAG, 2004). Therefore the members of COAG, acting at the discursive level of consciousness and motivated by a sense of ontological security, recognised an opportunity to complement and extend the reform agenda by establishing a National Water Initiative (COAG, 2004). The overall objective of the NWI is to achieve a nationally compatible market, regulatory and planning based system of managing surface and groundwater resources for rural and urban use that optimises economic, social and environmental outcomes. The NWI comprised key elements that included: (1) best practice water pricing; (2) integrated management of water for environmental and other public benefit outcomes; (3) water resource accounting; and (4) urban water reform.

Best practice water pricing requires the institutional arrangements for the pricing of water to: (1) promote the economically efficient and sustainable use of water resources and water infrastructure assets; (2) facilitate the efficient functioning of water markets; and (3) give effect to the principle of 'user-pays' and achieve pricing transparency and cost recovery. Integrated management of water for environmental and other public benefit outcomes requires the identification of environmental and other public benefit outcomes through the development and implementation of management practices and institutional arrangements for those outcomes. Specifically it requires that environmental outcomes must be specified rigorously and taken into account, particularly environmental externalities and greenhouse impacts. The objectives of urban water reform include: (1) increasing water use efficiency; (2) encouraging the re-use and recycling of wastewater; (3) facilitating water trading; and (4) achieving improved pricing.

5.1.1.1 Water resource accounting

A key element of the National water initiative is the development of a water resource accounting framework. The purpose of water resource accounting is to ensure that adequate measurement, monitoring and reporting systems are in place to support public and investor confidence in the amount of water being: (1) traded and extracted for consumptive use; and (2) recovered and managed for environmental and other public benefit outcomes. In 2006, the Natural Resource Management Ministerial Council (NRMMC) established the Water Accounting Development Committee (WADC), whose mandate was to develop water accounting standards. Agency was central to the development of water accounting. Specifically a project was undertaken by Sinclair Knight Merz to stocktake and analyse Australia’s water accounting practices. The project was overseen by the National Water Initiative Committee (NWI Committee) of the Natural Resource Management Ministerial Council. The project identified principles, or the
building blocks, for the purpose of guiding development of water accounting in Australia including the institutional arrangements, user requirements, conceptual framework, the procedures for setting water accounting standards and water accounting information systems (SKM, 2006). Specifically, the stocktake report recommended establishing water accounting as a discipline, similar to financial accounting, to serve external users' needs as well as the management requirements of water businesses. Following the stocktake report's recommendations, the Natural Resource Management Ministerial Council (NRMMC) established the Water Accounting Development Committee (WADC) with the mandate to develop water accounting standards through the National Water Accounting Development project (NWADp), which commenced in 2007. In October 2008, the COAG Working Group on Climate Change and Water endorsed the reconstitution of the WADC as the Water Accounting Standards Board (WASB), an independent advisory Board to the Bureau of Meteorology, whose purpose is to oversee and coordinate water accounting standards development.

In May 2009, the WASB finalised the Water Accounting Conceptual Framework (WACF) for General Purpose Water Accounting Reports (GPWAR), which is in effect is the water industry's equivalent to financial accounting's Framework for the Preparation and Presentation of Financial Statements. In addition, it also released the Preliminary Australian Water Accounting Standard (PAWAS) in May 2009, whilst in August 2010, it published the exposure draft of Australian Water Accounting Standard (ED AWAS 1) in August 2010.

5.2 The National Greenhouse and Energy Reporting Act

In 2007, the Commonwealth Government of Australia passed the National Greenhouse and Energy Reporting Act 2007, which introduced a national framework for the reporting and dissemination of information about greenhouse gas emissions, greenhouse gas projects, and energy use. It therefore establishes the legitimating grounds, the representational schema and the domination perspective for greenhouse gas emissions (GHG) reporting within Australia.

The legitimating criteria, or the norms and values of the National Greenhouse and Energy Reporting Act 2007, are stated in its objectives, which are to: (a) underpin the introduction of an emissions trading scheme in the future; (b) inform government policy formulation and the Australian public; (c) meet Australia’s international reporting obligations; (d) assist Commonwealth, State and Territory government programs and activities; and (e) avoid the duplication of similar reporting requirements in the States and Territories. It therefore seeks to introduce a single national reporting framework for the reporting and dissemination of information related to greenhouse gas emissions, greenhouse gas projects, energy consumption and energy production of corporations (COA, 2007, pp. 2 – 3).

The morality supporting the norms of behaviour as specified in the NGER are the associated sanctions, in the case of the NGER, the enforcement of the act and the monitoring of compliance. As part of the process of monitoring compliance with the act, the NGER provides the Greenhouse and Energy Data Officer with the authority to appoint an external auditor to carry out an external audit of a registered corporation’s compliance with one or more aspects of the Act or the regulations (COA, 2007). However, the NGER does give the Greenhouse and Energy Data Officer the authority to allow a corporation to appoint an external auditor of its choice (COA, 2007). The NGER Act contains
civil penalty provisions, which are sanctions within the legitimation structure. The Australian Government Department of Climate Change has organized a consultation process which allows stakeholders to comment on amendments to the NGER Act.

The representational schema associated with the NGER Act is that it seeks to introduce within Australia a single national reporting framework for the reporting and dissemination of information related to greenhouse gas emissions, greenhouse gas projects, energy consumption and energy production of corporations (COA, 2007). Therefore, the element for the purposes of the signification structure is greenhouse gas emissions. A corporation that is registered under the NGER Act must provide a report to the Greenhouse and Energy Data Officer (GEDO) relating to: (1) greenhouse gas emissions; (2) energy production; and (3) energy consumption from facilities under the operational control of the controlling corporation, and facilities under the operational control of entities that are members of the corporation’s group (COA, 2007a, p.32). With regard to greenhouse gas emissions, registered corporations are required to report on greenhouse gases emitted from facilities under their operational control or the control of members of their corporate group (COA, 2007a). The Act allows the Minister to determine, by legislative instrument, methods, or criteria for methods, and therefore the interpretative schemes, by which the amounts of the emissions are to be measured for the purposes of this Act (COA, 2007, p.10). The Minister may specify: (a) different methods or criteria for different industry sectors; and (b) different methods or criteria depending on the circumstances in which the emissions, reduction, removal, offsets, production or consumption occurred (COA, 2007, p.10).

From a domination perspective, the NGER Act created a new structure of domination, specifically a regulatory body, the Greenhouse and Energy Data Officer. The NGER Act requires the Greenhouse and Energy Data Officer to keep and maintain a National Greenhouse and Energy Register, containing information that corporations which are registered under the act (COA, 2007). The Greenhouse and Energy Data Officer has the authority to register corporations under the act, as well as deregister (COA, 2007). A registered corporation is required to provide a report to the Greenhouse and Energy Data Officer relating to the: (a) greenhouse gas emissions; (b) energy production; and (c) energy consumption from the operation of facilities under the operational control of the corporation for each financial year (COA, 2007). It is an offence under the Criminal Code if false or misleading information is provided to the Greenhouse and Energy Data Officer for the purposes of compliance with the Act (COA, 2007). The Greenhouse and Energy Data Officer has the authority to disclose greenhouse and energy information for the purposes of facilitating reviews of Australia’s compliance with its international obligations relating to reporting of greenhouse gas emissions (COA, 2007). The Greenhouse and Energy Data has the power to request information as to whether or not the Act has been complied with and may require a corporation to appoint an external auditor or an auditor of its choice if it suspects that the corporation is contravening the act of regulations (COA, 2007).

5.3 Department of Sustainability and the Environment

In 2002, Victorian Department of Natural Resources and the Environment was divided into the Department of Primary Industries and the Department of Sustainability and the
Environment. The Department of Sustainability and Environment and the Minister for Water, Environment and Climate Change was responsible for issuing statements of obligations to water businesses under the Water Industry Act 1994 that imposed obligation upon water authorities on water authorities with regard to the performance of its functions as well as the exercise of its powers (Water Industry Act, Barwon Water).

5.3.1 Securing our water future

In 2004, the Victorian government issued a white paper, Securing our water future together, which set out an action plan for the purpose of securing Victoria’s water future over the next 50 years for the purposes of securing reliable water supplies, meeting the needs of the environment and sustainable water management (DSE, 2004). This action plan was a result of recognition by agents within the Victorian government, led by the Premier and the Minister for Water, acting at the discursive level of consciousness and motivated by a sense of ontological security, that: 1. Water use is not sustainable; 2. Rainfall was less reliable; 3. Victoria was in its eight year of drought; and 4. There was a resulting need to change the way water is used and valued (DSE, 2004). As a result, the Victorian government, through the Department of Sustainability and the environment issued the white paper, securing our water future in June 2004.

The securing our water future together established the following fundamental principles, or legitimating criteria, for water management in Victoria: 1. The management of water will be based on an understanding that a healthy economy and society is dependent on a healthy environment; 2. The government will maintain overall stewardship of all water resources irrespective of source, on behalf of all Victorians; 3. Water authorities will be retained in public ownership; 4. Users of the services our water systems provide should, wherever practical, pay the full cost, including infrastructure, delivery and environmental costs associated with that service; and 4. The water sector, charged with managing our water systems, will be capable, innovative and accountable to the Victorian community (DSE, 2004).

5.3.2 Our water our future

Based upon the principles established for water management in the securing our water future together, the Victorian government released an action plan, Our Water Our Future, in 2005. A central element of the framework was the Water (resource management) legislation which provided the mechanism for: 1. Creating environmental water reserves; and 2. Establishing a water resource management and planning system, the central element of which was sustainable water strategies (DSE, 2005). A second key element of the action plan was pricing for sustainability, key elements of which were the introduction of rising block tariffs, the environmental contribution and the establishment of a new pricing regulator, the Essential Services Commission (ESC) (DSE, 2005). The development of the our water our future action was a result of agents at the political economic level, including the Deputy Premier and Minister for Water and Environment and the Head of the Department of Sustainability and the Environment, acting at the discursive level of consciousness and motivated by a sense of ontological security:

“the Deputy Premier of the day, which was the Minister for Water and the Environment, Mr. John Thwaites, now Professor Thwaites, the Head of the Department at the time, Mr. Lindsay Neilsen, and the people here at the time. All saw the need for change, as well as other people in government agencies, a range of people in the community, whether it’s the ACF, and the environmental groups, through to the water utilities themselves. They all saw the need to bring water management into a much sharper and better focus, particularly on resource management.” (DD – 2009)
5.3.2.1 Sustainable water strategies

A key element of the our water our future package was the development of regional sustainable water strategies in order to plan for long-term water security across Victoria\textsuperscript{lxiii}. The purpose of the sustainable water strategies were to set out a long-term regional plan to secure water for local growth, while maintaining the balance of the area’s water system and safeguarding the future of its rivers\textsuperscript{lxiv}. Because the flow of water does not follow the boundaries of an individual water business, a strategy was required that took into account a region:

the structure of the water industry, which is based on a regional basis of boards, with boundaries, with boards who are responsible for providing water and water related services in those areas. They’re man made boundaries. But water doesn’t follow man made boundaries, it follows natural boundaries. If you create a water board, and the river runs through one water board to another, when you’re trying to resolve the resource issues, you need to take into account the impacts on more than just one board. So the concept of a strategy which took into account a region, and all the issues related to water, was developed, and that’s why we do regional strategies, not just water utilities strategies. (PE DSE)

The strategies were specifically designed to achieve the following objectives, or legitimating criteria:

1. Ensure reliable and safe water supplies;
2. Understand the implications of climate change;
3. Understand the implications of record low rainfall and inflows to reservoirs;
4. Protect and improve the health of rivers, aquifers and estuaries;
5. Maximise overall community benefits and ensure that no generation or group incurs unwarranted extra costs or receives additional benefits;
6. Support high value water use by industry and agriculture with the least impact;
7. Make the best use of water resources locally and throughout the region;
8. Further develop an appreciation of the value of water and a conservation culture in the community; and
9. Aim to be greenhouse gas emission neutral (DSE, 2005). In addition, the following principles were adopted to help deliver the strategy objectives: 1. Managing risk and uncertainty; 2. Maximising flexibility; 3. Greenhouse gas emission neutral; 4. Transparency; 5. Sequencing; and 6. Shared responsibility (DSE, 2005).

The representational schema associated with the sustainable water strategies included the following

1. Water conservation targets as measured by per capita water use;
2. Water usage as measured by residential water conservation (litres /person /day); and
3. Environmental flows (DSE, 2005). Specifically, the state government, through the DSE, requires water authorities to reduce water usage by at least 25% by 2015, reduce total per capital water usage by at least 25% by 2015 and enhance environmental flows through the adoption of the sustainable water strategies (DSE, 2005).

The domination perspective associated with the sustainable water strategies is set out in the water businesses statement of obligations\textsuperscript{lxv}. Specifically, the requirement of water authorities to deliver the projects and services associated with the sustainable water strategies is clearly specified in the statement of obligations. For example, the statement of obligations states that water authorities must manage their supply and demand balance to ensure that it can meet current demand plus a buffer of contingency water equivalent to seven years growth, develop a program of works or initiatives to secure water supplies beyond seven years and ensure that the program of works or initiatives is consistent with any Government sustainable water strategy (MWECC, 2007).

5.3.2.2 The Environmental Contribution

A second key element of the our water, our future agenda was the environmental contribution. Specifically, the Victorian government legislated to require water authorities to pay an
environmental contribution to fund water related initiatives (DSE, 2005). The environmental contribution was established to fund the sustainable management of water and address the adverse impacts associated with its use (DSE, 2005):

“The 2004 Our water our future paper identified that the government introduce an environmental levy, as a percentage of revenue of the water authorities. And the purpose of it was to ensure that there was more money available for programs designed to implement environmental objectives” (PE DSE – 2004).

Specifically, the Water Industry (Environmental Contributions) Act 2004 requires water authorities to make environmental contributions for the purpose of water related initiatives that: 1. promote the sustainable management of water; or 2. address adverse impacts on the environment from water use (DSE, 2005). The representational schema, or signification structure, associated with the Environmental Contribution is contained in Section 195 of the Water Industry Act 1994, which requires DSE to report on the details of expenditure funded by environmental contributions by water supply authorities in its annual report. Specifically, an appendix to the DSE annual report lists the programs that have been funded by the DSE as a result of the environmental contribution.

The norms and values, or the legitimating criteria, associated with the environmental contribution is contained in the Water Industry (Environmental Contributions) Act 2004, which states that the purpose for the collection of the contributions is to fund initiatives that seek to promote the sustainable management of water and address adverse water related environmental impacts (The Parliament of Victoria, 2004). The domination perspective of the Water Industry (Environmental Contributions) Act 2004 refers to its role as an authoritative and allocative resource. As an authoritative resource, the Water Industry (Environmental Contributions) Act 2004 establishes an obligation for water businesses to pay the environmental contribution into a consolidated fund, whilst the Minister for Environment and Water is required to prepare an annual report setting out details of the expenditure of all money paid as an environmental contribution by water authorities (The Parliament of Victoria, 2004). As an allocative resource, the environmental contribution was used to fund water initiatives. In summary, the environmental contribution was a source of ontological security to agents within the Department of Sustainability and the Environment, specifically the General Manager, Office of Water, that the price of water was reflecting the cost of infrastructure.

“To our delight, there’s been very strong support for how we’ve used those resources in pursuing environmental / sustainability agenda. We’ll continue to review how we spend that money, to get the best outcome, and one of the ways of doing that is the monitoring. It reflects also the fact, this is important point, the price of water generally reflects the cost of infrastructure. It didn’t traditionally reflect the costs of providing the resource and managing the environment at the same time, or sustainability if you like. what’s been the biggest change in sustainability in the last 10 years, I would say to you that the ability, through the ECL, to raise funds, to really address those environmental issues, is probably the most significant. It’s not just words, it’s actual money to do it, because the money authorities raise normally is just to provide infrastructure for drinking water quality”. DD – 2009

The associated routine was the approval and monitoring of water initiative capital programs which were funded by the environmental contribution

“For every dollar that comes into the, through the environmental contribution levy, that’s linked to a set of programs. Every program has a program manager, every program has an approved set of program objectives and approved work plan, it’s entered into our financial system, our business monitoring system, and we monitor every single element of each of the projects that are approved under the environmental contribution.” DD - 2009

Specifically, Section 195 of the Water Industry Act 1994 requires the DSE to report on the details of expenditure funded by environmental contributions by water supply authorities in its annual report.
This report is a modality of structuration which enables the simultaneous reproduction of structures of signification, legitimation and domination

5.3.2.3 Statement of obligations / Water Industry Act 1994

Under sections 4i and 8(1)(a) of the Water Industry Act 1994, the Minister for Water, Environment and Climate Change issued Statements of Obligations to water corporations and licensees which imposed performance obligations on the water corporations and licensees commencing in July 2007. The statement of obligations imposes sustainable management and environmental management performance requirements upon water businesses:

We articulate in a lot of those authorities exactly how they have to perform in a sustainability sense. So it’s through telling them in all that, and that’s a complicated picture, because that comes from, as I said, not just in our SEAS (statement of obligations), but from river and stream management plans to sustainable water strategies and from each of the regulators. – DD 2009

The statement of obligations seeks to ensure that the principles established by the statement government with regard to sustainable and environmental management are translated into specific performance requirements for water businesses:

“Broadly, the DSE is the advisor to government on water, and it’s an interface between the government and the water authorities. So the Minister and the Government expect us to look at all the plans the water authorities develop, and to advise the government whether in our view, the water authorities are meeting government, not only government policies, but all the various plans in place that are designed to achieve sustainability. we’ve got people in the department who sit down and look at each of those plans and make sure they’re the delivering what the government expects to see, and what the regulations, policies and strategies, plans, all the things that have been agreed, that they are going to deliver that”. – DD 2009

The legitimating criteria of the statement of obligations are its guiding principles, which state that water businesses: 1. manage water resources in a sustainable manner; 2. Effectively integrate economic, environmental and social objectives into their business operations; 3. Minimize the impact of their activities upon the environment; 4. Manage risk to protect public safety, quality and security of supply; 5. Operate as efficiently as possible consistent with sound commercial practice; 6. manage its business operations to maintain the long-term financial viability of the authority; 7. Undertake continuous review, innovation and improvement; and 8. Collaborate with other public authorities and government agencies to take account of regional needs (SOO, 2007).

As part of the statement of obligations, a water business is required to implement sustainable resource management through the adoption of programs for: 1. Assessing and monitoring available water supplies; 2. assessing and monitoring future demands on water supplies; 3. The efficient and effective management of demand for water; 4. Reduce leakage and minimizing other losses of water; and 4. Identifying opportunities for substituting potable supplies of water (SOO, 2007). The statement of obligations also requires water businesses to apply the sustainable management principles in the process of performing its functions as well as develop and implement programs for assessing, monitoring and improving its sustainability performance which includes responding to climate change, using resources more efficiently and managing everyday environmental impacts (SOO, 2007). Water businesses are also required to manage their demand and supply balance as part of their sustainable water strategy as well as develop and implement an EMS in accordance with the ISO 14000 series of EMS standards (SOO, 2007). In summary, these principles and requirements form the basis of the representational schema that agents from the Office of Water within the
Department of Sustainability and the Environment use to evaluate the environmental and sustainability performance of water businesses as part of the duality of structure.

As part of the domination perspective, the DSE requires water businesses to monitor compliance with their obligations as part of the statement of obligations, report on its progress in implementing the plans of actions as stated in the statement in obligations (SOO, 2007). In addition, the Water Industry Act 1994 requires that a water authority must comply with a Statement of Obligations that applies to it (POV, 1994).

In summary, the statement of obligations contains the modalities of structuration that enable agents within the DSE to simultaneously reproduce structures of signification, legitimation and domination associated with the environmental management and sustainability management of a water business as part of the duality of structure. The legitimating criteria, or guiding principles of the statement of obligations, are embedded in the representational schema which agents within the DSE use to monitor the compliance of water businesses with the statement of obligations as part of the duality of structure.

6. Summary and conclusions

This paper is still in the initial and early stages of development, particularly Section 5. Subsequent versions of the paper will examine the role of economic regulatory body, the Essential Services Commission and the environmental regulatory body, the EPA, in articulating and instituting at the political and economic level in articulating and instituting norms and practices for the Victorian water industry. For example, the establishment of the ESC in 2004 resulted in the development of a performance measurement framework which requires water businesses to report on their environmental performance with regard to Greenhouse Gas Emissions. This development has resulted in the establishment of legitimating grounds, representational schema as well as domination structures at the political economic level with regard to GHG emissions. Since 2002, the EPA has developed Carbon Management Principles, sustainability covenants as well as required water businesses to account for the GHG emissions through their wastewater discharge licenses. This has also resulted in the establishment of legitimating grounds, representational schema as well as domination structures at the political economic level with regard to GHG emissions. The results of interviews undertaken with representatives from the EPA and the ESC will be included in the next versions of the paper.

The next version of the paper also needs to examine the organizational field of the Victorian water industry and how it has developed and evolved since 2001. Specifically, how have the Victorian water industry norms, regulations and practices changed as a result of changes at the political economic level since 2001. For example, the introduction of the Our Water Our Future package has resulted in the introduction of statements of obligations for each Victorian water business that sets out new performance reporting requirements for each Victorian water business in the areas of sustainable management and environmental management. The development of the principles of sustainable water strategies at the political and economic level has resulted in the development of sustainable water strategies for four Victorian regions. With respect to the environmental contribution, legislation was passed in September 2004 which requires an environmental contribution equivalent to five per cent of urban authorities’ revenues and two per cent of rural water authorities’ revenues to be paid by water authorities. The establishment of the ESC has resulted in the development of a new regulatory accounting code and performance reporting framework for Victorian water businesses, which requires water businesses to report on their environmental performance, particularly GHG emissions. The EPA also established principles of environmental obligations for Victorian water businesses that were to be applied for the 2008 – 2013 price determination by the ESC as well as requiring water businesses to account for GHG emissions as part of their EPA licence requirements. These are examples as to how the Victorian
water industry norms, regulations and practices have evolved in the period 2001 to 2010 which will be discussed in the next version of the paper.

The next version of the paper also needs to examine how the three dimensions, that is the legitimation grounds (legitimation), the representational schema (signification) and the domination perspective (power) have evolved in the case study organisation, WBC, from 2001 to 2010. Changes in the political and economic level, particularly with regard to the introduction of the National Greenhouse and Energy Reporting Act, the Environmental Contribution, Sustainable water strategies as well as the introduction by the EPA of the carbon management principles have resulted in changes in structures of signification, legitimation and domination at the organisational level, particularly WBC. The next version of the paper will therefore examine how changes at the political and economic level as well as the organisational field affected WBC. In particular, the EMS at WBC became decoupled from day to day decision making and agents within WBC recognised the need to make changes to the EMS. This will be examined in the next version of the paper.

References


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Notes

i EMA seeks to highlight environmental aspects of a business in conjunction with identifying situations where economic benefits emerge, potentially leading to a competitive advantage (Burritt et al., 2002; Burritt and Schaltegger, 2010). See Burritt et al., (2002) for a comprehensive framework of EMA. The terms EMA and sustainability management accounting are interchangeable.

ii Public sector research into sustainability accounting is limited with the exception of Burritt and Welch (1997a, 1997b), Frost and Seamer (2002), Ball, (2005), Ball et al., (2006), Adams and McNicholas (2007) and Qian et al., (2011).

iii The terms sustainability accounting and environmental accounting may be regarded as synonyms.

iv Qian et al., (2011) use a combination of institutional theory and contingency theory to investigate EMA practices in NSW local government.

v Within the public sector, Modell (2009) observed that institutional research on performance measurement has progressed from a focus upon decoupling and loose coupling to greater attention on the processes shaping institutional pressures.

vi Bebbington et al., (2009) observe that institutional theory downplays managerial agency whilst Cruz et al., (2009) explain that neo institutionalists have been criticized for arguing that legitimacy and technical pressures are polar opposites, for failing to study the processes whereby institutions are created, transposed and decomposed and for neglecting power, agency and interest at the organizational level.

vii Dillard et al., (2004) believe that the Burns and Scapens framework, which is based upon Old Institutional Economics (OIE), is limited in recognizing the higher levels of social, political and economic issues that influence and define an organizational context and that it does not address the means by which actions at the organization level may influence the institutional context at the organizational field level or the societal level.

viii Cruz et al., (2009) observed that Hopper and Major (2007) replaced Dillard et al.’s (2004) conceptualisation of innovators versus late adopters at the organizational level, with a process whereby the organisational field practices come to be translated into a working practice and, subsequently, enacted at the intra-organizational level.

ix Institutional theory regards institutionalization as a process whereby the practices expected in various social settings are developed and learned (Dillard et al., 2004).

x An organizational field refers to those organizations that constitute a recognized area of institutional life such as regulatory agencies, and organizations that produce similar services or products (DiMaggio & Powell, 1983, p.148).

xi This is part of the discharging and control of accountability relationships (Granlund, 2003).

xii Englund and Gerdin (2008,p.1124) argue that by referring to MAS as modalities”, management accounting refers to “properties of social structure” or “represents something that generates action”.

xiii Roberts and Scapens (1985) initially drew a distinction between accounting systems and system of accountability, which Burns and Scapens (2000) modified in a framework that studies management accounting as the rules and routines.
A structural contradiction is where the modalities of structuration have rules that work against each other (Boland, 1993). Giddens (1984) distinguishes between conflict and contradiction as contradiction is a structural concept whilst conflict is not.

New Public Management (NPM) is associated with “the endless list of accounting based, ‘financial management’ techniques that are drawn upon in the pursuit of reform” (Guthrie et al., 1999, p. 210).

Specifically, Dillard et al., (2004) p.521 argue that “symbolic representations and/or values not associated with resource acquisition and distribution are eventually abandoned” and “resources unfocused by rules will eventually dissipate”.

The name of the organization is not disclosed. The organization is referred to by pseudonym.

For the first phase, interviewees are denoted by the letter S for senior manager and M1, M2 and M3 for middle management.


Ibid.

For the second phase, interviewees are denoted by S1 for senior manager, and M1a and M2a for middle management.

This was because revenue is tied to the amount of water sold and reduced usage will, at least in the short to medium term, reduce the financial performance of an authority (VAGO, 2000).

The Council of Australian Governments (COAG) is the peak intergovernmental forum in Australia. COAG comprises the Prime Minister, State Premiers, Territory Chief Ministers and the President of the Australian Local Government Association (ALGA).


Government Business Enterprises, also known as Public Business Enterprises (PBEs), are mainly comprised of utilities, such as water electricity gas and telecoms, which although in many cases have been privatised, are still associated with the public sector, and the services they provide remain central to public life (Broadbent and Guthrie, 2008).

New Public Management sought to reduce and remove the differences between the public and the private sector through reforms such as the adoption of accounting based, ‘financial management’ techniques (Guthrie et al., 1999; Hood 1995). It is therefore an influential set of management techniques drawing on private sector performance criteria and practices. (Lapsley, 2009).

Externalities were defined by the expert group as environmental and natural resource management costs attributable to and incurred by a water business (NCC, 1998, p.113).

EPA waste discharge licence EM35642

Ibid.

Ibid.


The introduction of the Financial Management Act 1994 coincided with the adoption by the Commonwealth of corporate type structures for Public Business Enterprises

Full cost recovery requires that a water business must price between a floor price that allows for the continuing commercial viability of the system and a ceiling price which incorporates asset values and a rate of return but does not include monopoly profits (NCC, 1999a). Within this band, a water business should not recover more than operational, maintenance and administrative costs, externalities, taxes or tax equivalent regimes, interest costs on debt and dividends (NCC, 1999a).

Broadbent and Guthrie (2008) observe that arguments have been made that this is inappropriate, given the distinct nature of some elements of the sector, which leads to claims of incompatibility with business approaches.

Environmental costs have two dimensions: i) “private costs” – conventional (direct) costs; hidden costs; contingent costs; relationship and image costs; and ii) “societal costs” – externalities (Gray & Bebbington, 2001)


The NWC also conducted the final (2005) assessment of water reform progress under the National Competition Policy.


