ABSTRACT
Sustainability accounting in local government is under-researched and in an embryonic state of development. An examination of recent developments in two countries, Japan and Australia, in the context of new public management reveals several differences. First, Japan adopts a narrower version of sustainability accounting and reporting commensurate with a focus on environmental matters as influenced by national policies. Second, wider measures of eco-efficiency benefits are reported in Japan and are integrated with notions of effectiveness, unlike the situation in Australia. Finally, accrual accounting is not in use in Japan thereby making it harder to integrate mainstream and sustainability accounting than is the case in Australia.

1. INTRODUCTION
To date, attention has largely being directed at approaches to sustainability accounting in the private corporate sector where the emphasis is upon the business case for corporate sustainability (Salzmann et al., 2005) and building information about social and environmental impacts into everyday decision making activities (Schaltegger & Wagner, 2006). Although the question has already been raised as to whether the planet is safe in the hands of private companies (Gray & Bebbington, 2001) less attention has been directed at the role of public sector entities (Ball, 2005; Farnetti and Guthrie 2009).

Public sector entities as well as private sector entities consume the limited environmental and social resources in their everyday operations and, from the sustainability point of view, also need to pursue efficiency in their activities. In addition, public sector entities have responsibility for maintaining sound environmental /sustainability conditions in their jurisdictions. Therefore, in order for local government to be held to account by residents, demands are growing for the introduction of sustainability accounting. In practice, in some local governments sustainability accounting information is already being disclosed and so local government is considered here as being representative of public sector entities.

The purpose of this paper is to identify characteristics of sustainability accounting in Japanese and Australian local governments, and to clarify the differences between Japanese and Australian cases. In addition, the reason why those differences have emerged is examined.

Local governments in Japan and Australia are selected for study because (1) both countries have developed sustainability accounting and reporting practices, but (2) the government accounting system and new public management (NPM) based method of management implemented differs between the two countries.
To undertake the comparison between practices in two different countries, the paper is structured as follows. First, in Section 2, two characteristics of sustainability management and accounting in local government are identified: “controllable activity management” and “administrative activity management”. In Section 3, relevant aspects of NPM are provided as background information about sustainability accounting in local governments in the two countries. Third, in Sections 4 and 5, sustainability accounting practices in Japan and Australia are examined in the context of NPM and the respective characteristics of local government. In the final section, differences between sustainability accounting in local government in Japan and Australia are clarified, and some remaining issues that need to be solved in future research are presented.

2. PUBLIC SECTOR SUSTAINABILITY MANAGEMENT AND ACCOUNTING CHARACTERISTICS

In general, public sector entities supply public administrative services for residents at no charge or at a price which does not reflect the full economic cost, whereas private sector entities provide goods or services with a view to profit. The ratio of expenditure by the general government sector to Gross Domestic Product is about 18% both in Japan and Australia, and the public sector plays an important part in their national economies. Hence, we can identify the activities of public sector entities as having considerable impact on the national economy, environment and society (GRI, 2004, pp. 2-3; CIPFA, 2004, p.9).

Public sector entities not only need to implement environmental protection activities to improve their environmental performance, but they also need to act as leaders of sustainability management and accounting (GRI 2005, p.8). Considerable influence of public sector entity activities has raised the issue of the need to be accountable and to disclose sustainability-related information to residents. Information needed relates to the environmental burden imposed and any improvement from local government activities in accordance with delegated responsibility to manage activities impinging on environmental and social impacts. From this point of view sustainability management is a “controllable activity management” (Kawano, 2001, pp. 119-122). Hence, sustainability accounting in local government can be called “Accounting for Controllable Activity” (hereafter ACA).

ACA has a similar accounting structure to that of private corporate sustainability accounting. Therefore, ACA for local government can act as an exemplar of practice (Bennett, 2008, p. 445; CIPFA, 2004, p. 9).

Public sector entities with a sustainability strategy to manage environmental conditions in their jurisdictions need to clarify whether conditions are getting better or worse. Sustainability management from this point of view can be called “administrative activity management” (Kawano, 2001, pp. 119-122). Sustainability accounting in public sector entities also plays a role in preparing sustainability-related information relating to administrative activities and in the communication of that information to residents. Sustainability accounting in this sense can be termed “Accounting for Administrative Activities” (hereafter AAA). The AAA aspect of sustainability accounting is a distinguishing characteristic of public sector entities. Sustainability accounting by private sector entities does not have this characteristic.

3. NPM TRENDS IN THE PUBLIC SECTOR

Recently, public sector entities have been introducing sustainability accounting both in Japan (Kawano, 2001) and Australia (Farneti and Guthrie, 2009). Diffusion of NPM in public sector entities is one of the main backgrounds to this trend. As NPM provides context through which to examine the trend

\[ Data \text{ } \text{extracted \text{ } by } \text{“OECD.Stat.”}(\text{OECD, 2009}). \]
in sustainability accounting in the public sector, an understanding of NPM is needed.

NPM refers to “a shorthand name for the set of broadly similar administrative doctrines which dominated the bureaucratic reform agenda in many of the OECD group of counties from the late 1970s.” (Hood, 1991, pp. 3-4). NPM can be characterized as “lessening or removing differences between the public and the private sector” and as “shifting the emphasis from process accountability towards a greater element of accountability in terms of results.” (Hood, 1995, p. 94).

Hood (1991, pp. 95-97; 1995, pp. 4-5) points to the following doctrines employed by NPM:

1. “A shift towards greater disaggregation of public organizations into separately managed ‘corporatized’ units for each public sector ‘product’”;

2. “A shift towards greater competition both between public sector organizations and between public sector organizations and the private sector”;

3. “A move towards greater use … of management practices which are broadly drawn from the private corporate sector …”;

4. “A move towards greater stress on discipline and parsimony in resource use and on active search for finding alternative, less costly ways to deliver public services …”;

5. “A move towards more ‘hands-on management’…”;

6. “A move towards more explicit and measurable … standards of performance for public sector organizations …”; and

7. “Attempts to control public sector organizations in a more ‘homeostatic’ style according to present output measures ….”

These doctrines of NPM can be realized by transplanting business management methods from private sector to public sector entities. In order to achieve this outcome public sector entities need to develop a business management cycle, such as continuous improvement through plan-do-check-act, and then the entities can move toward “management by objectives” or “management by results” (Hayashi, 2001, p. 2; Cavallusso and Ittner, 2004, pp. 244-245). The “result” from implementation of these doctrines can be captured by using the input/output model illustrated in Figure 1. According to Figure 1, first, public sector entities have to set “objectives”, in order to achieve particular social and economic “needs” of residents. Second, resources are needed as “inputs” to “activities” which help achieve the “objectives”. The “activities” lead to “outputs” for the entities. Interactions between “outputs” and the social environment produce medium term “results”, and long term “impacts” on society. Finally, the value of “activities” and “outputs” of public sector entities relies on “outcomes” that consist of “results” and “impacts” (Pollitt and Bouckaert, 2000, p. 12).

According to “management by results” thinking, economy and efficiency can be measured through the comparison of inputs and outputs, and effectiveness can be captured by comparing objectives and outcomes (e.g. OECD, 1997, pp. 26-27; Hayashi, 2001, p.3). The system of performance evaluation is a one of the NPM methods employed by a number of public sector entities both in Japan and Australia (Christensen and Yoshimi, 2001). The aims of this system are to measure economy, efficiency and effectiveness of policies, programmes and projects executed by public sector entities, and to utilize the results of the evaluations for administrative planning.

Further, in order to measure and communicate efficiency of administrative activities, it is expected that governmental accounting systems should play a significant role in policy management (Lapsley, 1999, p.
In line with global NPM trends, governmental accounting reform has been promoted both in Australia and Japan. One additional consideration relates to the introduction of accrual accounting. The accrual based accounting system has been fully introduced into the Australian public sector, whereas NPM has been introduced into Japanese public sector entities without modifying the conventional cash based accounting system (Guthrie, et al., 1999; Yamamoto, 2001; Pina and Torres, 2003).

Since the cash based accounting system has a legislative background in Japan, two separate methods of accounting are now in existence.

4. SUSTAINABILITY ACCOUNTING IN JAPANESE LOCAL GOVERNMENT

4.1. Background to Sustainability Accounting in Japanese Local Government

In this section two important considerations are introduced relating to environmental policies and environmental management systems.

**Environmental Policies and Sustainability Accounting**

Japanese central and local governments have been set institutional and legislative structures for environmental conservation since the 1992 Rio Earth Summit. At the centre, the *Basic Environment Law* of 1993 represents the government’s fundamental environmental concepts, policies and programs. In order to implement ambiguous concepts prescribed in law, the government was required to establish the Basic Environment Plan which prescribes specific medium-term programs.

Enactment of the Law and the Plan of central government has diffused the setting of environmental ordinance and the basic environment plan by local governments. This plan provides the basic guideline for environmental administration, clarifies fundamental principles of environmental programs, and integrates each individual environmental plan (Tanaka, 2008). The plan has a *Plan-Do-See* characteristic as in the following steps (Kitamura, 2003):

1. Measurement of the state of the

![Figure 1: The input/output model for NPM (Source: Pollitt and Bouckaert, 2000, p. 13)](image-url)
environment of the jurisdiction;
(2) Set medium-term targets and programs; and
(3) Execute, manage and provide feedback about the plan.

A number of local governments have been introducing systems for progress management or management by objectives. The law recommends that progress/objective management processes contain evaluation of progress toward initial established targets with the results of the evaluation being disclosed in an environmental report or white paper. Finally, the information is to be used in revision of the plan.

Officers and managers of local authorities already realize the importance of the plan and its management. Hence, in practice, utilization of sustainability accounting information to progress/objective management is one of the principal reasons for introducing sustainability accounting in Japanese local governments (City of Kobe, 2008; Kyoto City, 2009). This trend is characteristic of sustainability accounting in Japanese local governments.

**Diffusion of Environmental Management Systems in Local Governments**

Another trend in environmental administration in Japanese local government is diffusion of environmental management systems (hereafter EMS), such as ISO 14001. Many researchers have identified positive drivers for the introduction of EMS in local governments (e.g. Lewis, 2000; Burström, 2000; Norén and Malmborg, 2004; Zutshi and Sohal, 2004). Most large and medium sized local governments in Japan have already established EMS in their offices.

With regard to NPM in local governments, the benefits from implementing EMS are: cost savings through reduction of input and output of resources; facilitation of communication between staff; and increasing efficiency and effectiveness of existing systems through improvement of daily operations (Zutshi and Sohal, 2004, pp. 350-352). In short, pursuing efficiency and effectiveness of activities through NPM has been driving the introduction of EMS in local governments.

The EMS under ISO 14001 consists of a plan-do-check-act management cycle, and as a result, EMS intends indirectly to achieve continuous improvement of environmental performance. However, environmental policies, targets, and progress/objectives management are voluntarily established by each entity. Hence, EMS only presents a conceptual framework for consideration (Gray and Bebbington, 2001, p. 45; Schaltegger and Burritt, 2000, p. 378).

Further, the EMS itself does not directly contribute to improving environmental quality in the jurisdiction - the highest priority in local administration (Lewis, 2000, p. 315; Burström, 2000, p. 282). Even if better public environmental administration can be promoted by using physical information produced by the EMS, it is necessary for a link to be drawn between planned and actual physical information, in order to make EMS more effective. This is one of the reasons why several Japanese local governments have been introducing sustainability accounting.

**4.2. Objectives of Sustainability Accounting in Japanese local government**

At the prefecture and city local government levels, sustainability accounting tries to adopt the idea of the importance of input, output and outcome data as the basis for measuring efficiency and effectiveness of environmental activities. Objectives of these activities are to manage effectively the implementation of the basic environment plan for local government environmental policies and verify progress of the EMS. Therefore, local governments wish to introduce a management tool for the plan, which, with the assistance of the EMS, has become the highest priority for environmental administration.

As stated in section 2, government activities possess dual characteristics – control and administration (Kawano, 2001, pp. 119-122;
The objective of control is to manage the office of the local government, while that of administration is to manage the effects of environmental policies on areas under their jurisdiction (Kawano, 2001, pp. 119-121). These two objectives of local government sustainability accounting are summarized in Figure 2.

**Figure 2: Objectives of Sustainability Accounting in Local Governments**

ACA aims to measure inputs (costs) of environmental conservation activities and outputs (benefits) from those activities; therefore, measurement of the outcome on society is of secondary importance. These environmental conservation activities refer to “the prevention, reduction, and/or avoidance of environmental impact, removal of such impact, restoration following the occurrence of a disaster, and other activities” (MOE, 2005, p. 3). Sustainability accounting pursues the efficiency of these environmental conservation activities.

AAA aims to measure inputs (costs), outputs (benefits) and outcomes (results) of environmental programs and projects executed by the local government in monetary terms, as far as possible. As stated above, effectiveness is measured by comparing objectives with outcomes. Since the environmental programs and projects are implemented in order to achieve the objectives described in the basic environment plan, AAA pursues the effectiveness of environmental administration.

### 4.3. Sustainability Accounting Example in Japanese Local Government

Yokosuka city has the longest experience of integrated sustainability accounting, commencing disclose of information since fiscal year 1998 (Yokosuka City, 2004). Yokosuka City’s sustainability accounting framework is represented in Figure 3. According to Figure 3, Yokosuka City identifies both ACA and AAA information; hence this type is referred to as “integrated”.

**Figure 3: Yokosuka City’s framework for sustainability accounting**

(Source: Yokosuka City, 2004).

**Sustainability Accounting for Controllable Activities**

The upper half of Figure 3 represents the framework for ACA based sustainability accounting in Yokosuka City. Since the information disclosed consists of expenses (inputs) and benefits (outputs) from environmental conservation activities, information produced is similar to that of private sector entities. Expenses and benefits are classified by each environmental conservation activity; therefore, the ACA executed by the local government in monetary terms, as far as possible. As stated above, effectiveness is measured by comparing objectives with outcomes. Since the environmental programs and projects are implemented in order to achieve the objectives described in the basic environment plan, AAA pursues the effectiveness of environmental administration.
type of information mostly complies with the Environmental Accounting Guidelines of the Japanese Ministry of the Environment (MOE, 2005).

Expenses are classified by each environmental conservation activity, such as “Pollution Prevention”, “Global Environment Conservation”, “Resource Circulation and Waste Disposal”, etc.. Also, these expenses are measured by the actual (cash-based) expenditures for environmental conservation activities.

Benefits are classified into three categories, internal, external and key performance indicators (KPIs). Benefits are measured in monetary terms except for KPIs which are measured in physical terms. Internal benefits to the local government itself refer to realized revenue and the benefits from resources savings, whereas external benefits refer to the effect which residents and/or society enjoys through environmental conservation activities undertaken by government activities. The actual amount of external benefits is not as large as the internal benefits.

In summary, it can be said that ACA places emphasis on the efficiency of environmental conservation activities; hence, this method of sustainability accounting has been influenced by NPM trends that pursue efficiency in government activities. ACA information prepared is used to reconsider the “See” step in EMS; however, it cannot reveal the state of the environment of the jurisdiction in detail. Further, if pursuit of efficiency of organizational activities places greater importance on accounting systems, the risk is that administrative officers will tend to focus on easy-to-manage activities as efficiency orientated NPM is introduced (Burritt and Welch, 1997, pp. 16-17).

Finally, consideration is given to another aspect of sustainability accounting, AAA.

**Sustainability Accounting for Administrative Activities**

The lower half of Figure 3 represents the framework for AAA based sustainability accounting in Yokosuka City. This type of accounting is unique to public sector entities. Expenses and benefits are presented symmetrically in a similar way to ACA; however, expenses and benefits are measured in accordance with environmental programs and/or projects that are included in the basic environment plan.

Expenses are extracted from existing general accounts based on cash-based measures of accounting, and represent the amounts expended on environmental administration. However, in contrast with ACA information, benefits are measured and disclosed only in physical units or indices in monetary terms. Measured benefits or indices are classified into three; “environmental administrative activity indices”, “environmental pressure indices” and “environmental state indices” (hereafter EAI, EPI, ESI). All of these indices are categorized as external benefits.

EAI refers to the output of environmental administrative projects; e.g. the number of EMS constructed in the jurisdiction and “the volume of collected recyclable wastes in the jurisdiction”, etc.. Strictly speaking, EPIs do not express benefits, but they represent the volume of environmental burdens which residents and firms within the jurisdiction discharged during the accounting period. Therefore, EPI is another aspect of output from the government’s administrative activities. ESI belongs to outcome or result indices. Examples of ESI are concentrations of SO$_2$, benzene, and PM10, BOD, COD, etc.....Yokosuka City’s example shows the amount of administrative effort by comparing the initial target with the indices.

These characteristics of AAA indicate the pursuit of effectiveness of environmental administrative activities and, hence, are different from the efficiency focus of the ACA method. In summary, using the AAA method the government intends the results of the administration to be presented through management by results/objectives.

The ACA part of sustainability accounting in Yokosuka City has now shifted to their policy evaluation systems, and they do not
disclose such information as “accounting” (Yokosuka City, 2009, p. 150).

An Analysis of Yokosuka City’s Sustainability Accounting Information
An inter-annual analysis of Yokosuka city’s sustainability accounting monetary data is shown in Tables 1-a and 1-b.

Table 1-a: Expenses and Benefits of Controllable Activities in Yokosuka city

According to Table 1-a, the amount of environmental conservation expenses increases rapidly in the 2001 and 2002 fiscal years. The main reason for this is increased expense for dioxins treatment at waste incinerating facilities.

Table 1-b: Efficiency of Controllable Activities in Yokosuka city

Table 1-

Balanced Scorecard Perspectives

<table>
<thead>
<tr>
<th>Environmental activities</th>
<th>Financial</th>
<th>Learning and growth</th>
<th>Internal Processes</th>
<th>User (Stakeholder)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Targets</td>
<td>Input</td>
<td>Output</td>
<td>Output</td>
<td>Outcome</td>
</tr>
<tr>
<td>XXX</td>
<td>XXX</td>
<td>XXX</td>
<td>XXX</td>
<td>XXX</td>
</tr>
</tbody>
</table>

XXX = accounting provided by Iwate prefecture, Japan

4.4. BSC-type Sustainability Accounting in Japanese local government

Iwate Prefecture (Iwate) provides a second example of a local government which has integrated the two types of sustainability accounting. Iwate uses a different approach and recognizes different performance areas, as reflected through a balanced scorecard (BSC). Inputs are expressed in terms of the monetary representation of these activities; outputs are designed around organizational learning and internal processes that can help reduce environmental impacts; while outcomes are couched in terms of the customer (or user) perspective.

Figure 4: Iwate’s framework for sustainability accounting (Source: Iwate, 2004).

The partial framework for sustainability accounting in Iwate prefecture is shown in Figure 4 and it reflects:

- the inclusion of information on environmental and economic impacts of the public sector organization’s activities;
- information about economy, efficiency, and effectiveness of activities;
- a ready means for integrating information, for example, to assess eco-efficiency or eco-effectiveness; and
the provision of information in monetary and non monetary terms related to financial, learning and growth, internal processes and user dimensions of performance.

Iwate data provides an integrated sustainability accounting system with input-related cost information and output-outcome information expressed in physical and monetary units. The information is related to two sets of environmental activities – environmental administration policies and internal environmental measures.

Input information used for evaluating the economy of administrative services can be obtained from the ‘investment amount’ and ‘expense amount’. Performance information on the output - outcome relationship, used for evaluating efficiency and effectiveness, can be obtained from the ‘future (learning and growth) perspective’, ‘internal process perspective’ and ‘user perspective’ columns.

Iwate introduced sustainability accounting in the context of assessing the results of conjoint analysis applied to value different environmental conservation options desired by residents as well as promotion of the notion of ‘Public Private Partnerships’. Information from conjoint analysis affects policy choices and the results of prefecture decisions are reflected in the sustainability accounting information. The accounting system supports decision making at the local prefecture level in a pragmatic way.

The Iwate example illustrates the perceived importance of a pragmatic, user based approach to development of sustainability accounting as a tool that contributes information in relation to policy decisions, planning and control in the prefecture. However, to date, Iwate’s sustainability accounting and budgeting systems have not been integrated, thus reducing the usefulness of sustainability accounting data for planning and control. Sustainability accounting at Iwate could be seen as providing transparent information to stakeholders about the results of government policies, however, movement towards sustainability accounting in local government would depend on recognition that social goals should also be considered and accounted for.

5. SUSTAINABILITY ACCOUNTING IN AUSTRALIAN LOCAL GOVERNMENT

Australia has three levels of government: the Australian Government (also called federal and Commonwealth), State and Territory, and local.

5.1. Sustainability Accounting and Reporting in the Australian Government

In 1992, in line with Agenda 21, introduced by the Earth Summit, the importance of social reporting and management for public sector entities was highlighted with the release of ‘Social Responsibilities of Commonwealth Statutory Authorities and Government Business Enterprises’ by the Australian Government’s Joint Committee of Public Accounts (Commonwealth of Australia, 1992). This report recognizes existing reports on social performance of Commonwealth entities and highlights inadequacies, especially in relation to issues of social justice for citizens and ‘clients’, responsibilities to employees, and towards the community. Since 1992, the pursuit of ecologically sustainable development has been increasingly incorporated into the policies and programs of Australian governments as a significant policy objective, for example, through the Commonwealth Environmental Protection and Biodiversity Conservation Act 1999 (the Act) which came into force in 2000. Under Section 516A of the Act Commonwealth Departments, Parliamentary Departments, Commonwealth Authorities, Commonwealth Companies and other Commonwealth Agencies were required to include in their annual reports information about their performance in relation to ecologically sustainable development (ESD). These developments led to increased demand for sustainability accounting to support reporting at the Commonwealth level.

Australia published three Australian State of the Environment Reports in 1996, 2001 and 2006 which show the nation’s environmental state at a given time (Lenzen, Dey & Murray, 2004; DEHWA, 2008). With the aim of evaluating the long-term sustainability of Commonwealth Government policies, the Treasurer publishes an Intergenerational Report (IGR) every five years (Coombs & Dollery, 2002).

Links between this push for TBL reporting and the development of sustainability accounting for public sector organisations at the Commonwealth level in Australia have not yet been clearly established. Sustainability accounting is in its infancy, but the basic foundations are in place for development.

State and Territory governments are clearly engaging in environmental reporting and considering TBL reporting, however links to sustainability accounting appear somewhat tenuous.

5.2. Sustainability Accounting in Australian Local Government

Some local authorities in Australia have incorporated the triple bottom line into their annual reporting processes, the City of Melbourne being the first to do so (GRI Resource Document, 2004, p.14). Other examples include Lake Macquarie City Council, Onkaparinga City Council, and Manningham City Council.

The City of Melbourne formally adopted the *Melbourne Principles for Sustainable Cities* on 2 May, 2002 (City of Melbourne, 2002; 2004) (see Table 2) and Eco city campaign, to act now on the future challenges of changing climate (City of Melbourne, 2008a). These principles have the potential to guide the decision-making process by refining strategic planning and local governance.

<table>
<thead>
<tr>
<th>Melbourne Principles for Sustainable Cities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Long-term planning for intergenerational social, economic and political equity</td>
</tr>
<tr>
<td>2. Long-term economic and social security</td>
</tr>
<tr>
<td>4. Minimising ecological footprint</td>
</tr>
<tr>
<td>5. The form and function of ecosystems</td>
</tr>
</tbody>
</table>

Table 2: Melbourne Principles for Sustainable Cities (Source: [www.epa.vic.gov.au Business Sustainability sustainable_cities.asp](http://www.epa.vic.gov.au Business Sustainability sustainable_cities.asp))

The following chart shows the amount the City of Melbourne spent (expenditure) and the amount it earned (revenue) in delivering its services and programs within the strategic objective of being an environmentally responsible city.
The City of Melbourne continues to take steps to improve its capacity to monitor its environmental footprint. It has identified greenhouse gas emissions, water and waste as being the most relevant environmental sustainability issues (City of Melbourne, 2008b).

Second, performance measurement. In 2002, the City of Melbourne published ‘Zero Net Emissions by 2020 – A roadmap to a climate neutral city’ which positioned Council as a world leader by setting an ambitious target of zero net emissions by 2020. The following table shows the implementation status of the Zero Net Emissions by 2020 – and strategy update which was adopted by the Melbourne City Council in September 2008.

<table>
<thead>
<tr>
<th>a) Leading edge design</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Commit to best practice for the Commonwealth Games Village.</td>
<td>Achieved</td>
</tr>
<tr>
<td>5 Star energy regulation for residential housing by 2003.</td>
<td>Achieved</td>
</tr>
<tr>
<td>New energy regulations for commercial property by 2004.</td>
<td>Achieved</td>
</tr>
<tr>
<td>Encourage the Property Council of Australia (PCA) to revise its rating code to include energy efficiency.</td>
<td>Achieved</td>
</tr>
<tr>
<td>Accelerate approvals for green buildings and environmentally sustainable development (ESD) features.</td>
<td>Partially achieved</td>
</tr>
<tr>
<td>Introduce mandatory energy modelling for buildings greater than 5,000 sq m.</td>
<td>Achieved</td>
</tr>
<tr>
<td>Introduce a procurement scheme for green offices.</td>
<td>Not achieved</td>
</tr>
<tr>
<td>Establish a green building ‘learning hub’ as part of a Global Centre of Greenhouse Expertise and Technology.</td>
<td>Not achieved</td>
</tr>
<tr>
<td>Fund design charrettes for new buildings.</td>
<td>Achieved</td>
</tr>
<tr>
<td>Develop an energy assurance scheme for buildings greater than 5,000 sq m.</td>
<td>Achieved</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>b) Greening the supply</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Progressively increase the City of Melbourne’s use of renewable energy.</td>
<td>Partially achieved</td>
</tr>
<tr>
<td>Pass on innovative energy-efficient technologies to the City of Melbourne’s</td>
<td>Partially achieved</td>
</tr>
</tbody>
</table>
Sustainable Investment Fund
Independent
Board of Trustees.

Participate in a fuel cell
demonstration project. Not
achieved

Establish a green supply chain by 2004, using the Green Tick and Greenhouse Challenge standards. Not
achieved

Participation in a Green Power buying consortium to access green power at the lowest possible price. Achieved

Better coordination of expertise. Not
achieved

Promote Melbourne’s expertise and technologies abroad and assist local firms to attract international investment in sustainable energy technologies. Not
achieved

Support the Victorian Government in encouraging the use of embedded energy, solar hot water and co-generation. Not
achieved

Support energy retailers and contractors to move to value-added services: examine solar hot water financing as a first step Not
achieved

c) Sequestration

Establish a city-rural partnering arrangement to invest in a carbon sink. Not
achieved

Invest in blue-Mallee eucalypt plantations as feedstock for renewable power generation, with eucalyptus oil as a by-product. Not
achieved

Establish an investment vehicle for City of Melbourne businesses and residents for commercial offsetting projects. Not
achieved

Link this investment vehicle and a carbon credit purchasing scheme for tenants as part of the pilot municipal emission trading market. Not
achieved

Table 3: The 'Zero Net Emissions by 2020 – Actions Implementation and Strategy Update 2008'


Of interest is the observation that, according to the City of Melbourne, triple bottom line reporting led to changes in departmental processes, particularly in the way data was collected and performance analysed (GRI Resource Document, 2004, p. 27).

Some inferences for sustainability accounting can be found in their Triple Bottom Line (TBL) toolkit which represents a set of checklists, guidelines, templates and case studies for the application of TBL decision-making and reporting.

First, capital works. The toolkit includes a capital works sustainability statement designed to be applied to the capital works bidding/ budget approval process and to provide additional criteria against which capital work submissions are to be evaluated. The City uses two criteria for capital works (i) do they meet the strategic directions of the City, and (ii) how urgent are the works. Projects of critical importance lead to a pre-commitment. The toolkit suggests that sustainability rating is a third criterion that would be used to rank any capital works submissions that are not deemed critical or pre-committed. In practice, sustainability ratings were not needed as:

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2 City of Melbourne
The capital works budget for 2002/03 was absorbed almost entirely by a number of pre-committed and critical projects. This meant that no additional projects were approved and the Sustainability Statement ranking system was effectively made redundant, a situation likely to recur over the next few years.³

In effect, decisions were not influenced by the notion of sustainability adopted. However, an integrated approach would recognise the importance of sustainability issues in the first two criteria used to assess capital works.

The Global Reporting Initiative (GRI) and the National Greenhouse and Energy Reporting Act 2007 (Cwth), as well as the International Council for Local Environmental Initiatives’ (ICLEI) Cities for Climate Protection program, have helped to guide environmental sustainability performance reports of the City of Melbourne.

The 2006-07 Annual Report was runner-up in the first Global Reporting Initiative (GRI) Readers’ Choice Awards for sustainability reporting - the only Australian organization to be recognized (City of Melbourne, 2008c). The 2007-08 Annual Report contains a stand-alone section on sustainability performance which was prepared to meet the requirements of GRI application level B (City of Melbourne, 2008b).

6. CONCLUDING COMMENTS

Several observations can be made about the contrasting cases of sustainability accounting examined in Japan and Australia.

First, is the difference in scope between sustainability information used by the local governments. Sustainability accounting in the Japanese local governments concentrate on environmental sustainability, whereas the scope of sustainability accounting in Australian local governments is broader. The Australian case contains sustainability information relating to the economy, environment, social and cultural issues. In comparison with the Japanese cases, information disclosed in the Australian example is in line with international trends towards sustainability reporting represented by GRI. Nevertheless, Japanese local governments disclose more substantial environmental information than in the Australian case.

It can be inferred that the issue of scope is influenced by national policies of each country. The Australian Government has already enacted a sustainability strategy which includes social and environmental aspects, whereas the Japanese Government’s sustainability strategy only concentrates on environmental sustainability as supported by the Act and the Plan.

Second, local governments from both countries have tried to measure efficiency of sustainability activities using costs and benefits. When comparing Table 1 with Chart 1, the Japanese examples consider both internal and external monetary benefits, whereas the Australian example only considers realized revenue as representing benefits. In the examples cited sustainability accounting by Japanese local governments places stress on efficiency by measuring benefits based on a wider scope of environmental aspects than the Australian case.

In relation to the effectiveness of sustainability activities, Japanese examples try to measure costs in monetary terms and benefits in physical units for each activity/program over time by using the AAA model, whereas in the Australian case effectiveness is measured using comparisons between ex ante targets and ex post environmental footprints. Therefore, it can be inferred that the Japanese model tends to express efficiency and effectiveness within a single framework; however, the Australian example uses variances to show effectiveness while playing down efficiency.

³ City of Melbourne at http://www.melbourne.vic.gov.au/rsrc/PDFs/TBL/CAPWORKSSUSTAINTXT.DOC accessed 17.5.05
Third, the linkage between mainstream accounting (accrual accounting or cash based accounting) and sustainability accounting differs between the two countries. As Australia has already converted to accrual based accounting, it is easier and useful to link mainstream accounting and sustainability accounting. On the other hand, there is no link between mainstream accounting and sustainability accounting in Japan.

NPM provides the background to introduction of sustainability accounting in local governments. Implementation of NPM can lead to the achievement of improvement in efficiency in the governments’ activities; therefore, NPM can contribute to the improvement of governmental fiscal conditions through reorganizing inefficient programs and projects. Since outcomes or effectiveness are still difficult to measure, it can be inferred that public administrators tend to pursue efficiency rather than effectiveness. If so, no matter how a program or a project contributes to improved sustainability effectiveness, a problem is that public administrators may neglect those kinds of programs or projects. Hence, sustainability accounting in the public sector would not fully comply with the economic and efficiency based concept of NPM.

Sustainability accounting is still in its infancy in both of the countries and local governments surveyed; therefore, in order to construct sustainability accounting in public sector entities, further theoretical, empirical and case studies need to be promoted.

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