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Stakeholder pressure on carbon emissions: strategies and the use of management accounting

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ABSTRACT

Prior research finds corporate environmental behaviour to be a function of stakeholder pressure, which significantly impacts on organisational strategies and internal management practices relating to environmental issues. Applying Freeman's propositions on stakeholder management and corporate strategies, this study explains the relationship among stakeholder pressure, companies' climate change risk management strategies and management accounting practices. Evidence provided through interviews with 39 managers responsible for carbon emissions management within 18 large listed Australian companies is used to investigate these relationships. This study finds that the sample companies used different strategies in accordance with relative cooperative potential and the relative competitive threat posed by stakeholders in managing carbon emissions issues. It is also seen that companies use management accounting techniques as a risk management tool in supporting their climate change strategies.

KEYWORDS

Climate change; carbon emissions; management accounting; stakeholder pressure

Introduction

Climate change is a major strategic risk faced by modern corporations (Subramaniam et al. 2015), which generate about 70 per cent of total global emissions (CDP 2013). Therefore, a solution to climate change risk cannot be found without involving these corporations (Gray 2010). Many governments have attempted to drive organisational responses to climate change through the introduction of emissions trading schemes (with or without taxes), and abatement and disclosure regulations. These regulatory actions are proclaimed to be capable of driving companies to internalise the 'externalities' of carbon emissions (Lodhia 2011). Awareness of climate change issues among the public also demands that corporates accept greater responsibility in environmental matters (Alrazi et al. 2015; Schaltegger & Hörisch 2015).

The accounting literature, which discusses the influence of external pressure on organisational strategies and management practices, identifies stakeholder pressure as a key influential factor that affects internal strategies and the choice of management control (Alrazi et al. 2015). The relationship between stakeholder pressure and the environmental performance of organisations exists because organisations operate within a social

framework of norms and values (Deegan 2014). The institutional environment within which an organisation operates has a significant impact on its structure (Roberts & Greenwood 1997) and the adoption of management practices (Carpenter & Feroz 2001; Schaltegger & Hörisch 2015). Freeman (1984) argues that corporate strategies need to be assessed as functions of the relative cooperative potential and relative competitive threat posed by stakeholders. Accordingly, managers use different strategies in managing diverse stakeholder groups according to their relative cooperative potential and relative competitive threat (Freeman 1984).

During the period 2007–2014, Australian companies witnessed a significant amount of regulatory change in relation to managing carbon emissions (i.e. *The National Greenhouse and Energy Reporting (NGER) Act 2007* and Carbon Tax). These regulatory pressures should have had an impact on climate change strategies and management control systems of Australian companies. Additionally, greater awareness of climate change issues among the public may have pressured companies to be environmentally responsible (Alrazi et al. 2015). Therefore, it is informative to investigate how these external pressures influenced corporate strategies and internal management practices in relation to emissions management by Australian companies.

A number of studies have found that management accounting has the potential to make a significant contribution towards mitigating risks associated with climate change (Burritt et al. 2011; Contrafatto & Burns 2013). There are increasing calls for research that examines the dynamics of management practices adopted by companies to mitigate climate change issues (Contrafatto & Burns 2013; Modell 2014). In relation to corporate actions on environmental issues, studies find the industry in which a company is engaged to be an influential factor that shapes its environmental activities (Banerjee 2002; Hrasky 2012).

The objective of the current study is to gain some understanding of the implications of stakeholder pressure on climate change strategies and the use of management accounting practices in large Australian companies. With this aim in mind, the following two research questions arise:

1. How does stakeholder pressure on climate change issues affect risk management strategies within high carbon intensive (HCI) and low carbon intensive (LCI) companies in Australia? and
2. What are the implications of climate change risk management strategies for the implementation and use of management accounting practices within these companies?

The HCI sector includes companies in the utilities; chemicals; construction materials; oil, gas, and consumable fuels; metals and mining; and transportation industries. The LCI sector includes companies in industries such as property; food and beverage; finance; wholesale pharmaceutical; media services; and telecommunication service sectors. In order to better understand the complex and cumulative aspects and effects of an organisation's environmental management practices over time: 'it is sensible to adopt a theoretical perspective that is rooted in seeking to "see" and explain unfolding (change) processes over time' (Contrafatto & Burns 2013, p. 361). Therefore, the current study considers Freeman's (1984) stakeholder strategic formulation model as the conceptual underpinning to provide a comprehensive understanding of how companies respond to pressure exerted by stakeholders on climate change issues.

Overview of relevant literature

The main motivational factors that drive the actions of companies on climate change issues comprise the potential benefits in the reduction of costs, enhanced reputation, efficiency gains, brand building and new market creation, and the discharge of social responsibility (Hoffman 2007; Hockerts 2015). Epstein and Buhovac (2014) classified environmental and social risk into four distinct categories: strategic risk, operational risk, reporting risk, and compliance risk. Therefore, the management of carbon emissions generates benefits for companies in the spheres of finance, operations, compliance, and reputation (Epstein & Buhovac 2014; Hockerts 2015). Strategic planning, target setting, measurement of carbon emissions, and evaluation of emissions performance are essential aspects of improving management of climate change issues and managing corporate risk (Hoffman 2007; Perez et al. 2007; Henri & Journeault 2010). Therefore, the current study investigates how companies utilise these management accounting practices as risk management tools in managing climate change risk.

Increasing concern among salient corporate stakeholders over climate change issues evidently creates demand for companies to address or plan to address the challenges associated with climate change (Solomon et al. 2011; Subramaniam et al. 2015). There is a tendency for managers to identify and prioritise the demands of their most influential stakeholders (Mitchell et al. 1997). The way that companies respond to different stakeholders depends upon the 'power' exerted by each stakeholder group (Mitchell et al. 1997). The more dependent a company is on a stakeholder group for its critical resources, the greater the extent to which that stakeholder group can influence that company's actions (Ullmann 1985; Oliver 1991). Therefore, managers pay more attention to the demands of stakeholder groups that control resources critical to the survival of a company. Moreover, depending on the dynamics of the political environment, with increased carbon-consciousness among stakeholders, companies use different strategies to manage environmental issues (Wahyuni & Ratnatunga 2015).

The industry in which a company is active is an essential factor associated with its environmental activities (Hrasky 2012). The disclosures by companies in more carbon intensive sectors have shifted from symbolic disclosure strategies towards moral legitimacy strategies grounded by substantive actions; companies in less carbon intensive sectors appear to exhibit a symbolic disclosure strategy (Hrasky 2012). Therefore, the current study investigates whether Australian companies in the HCI sector use strategies in a different manner from firms in the LCI sector and whether such differences are reflected in the use of management accounting practices in mitigating carbon emissions risk.

The Australian government introduced The National Greenhouse and Energy Reporting Act 2007, which required high emitters to report their carbon dioxide emission volumes to the government, with subsequent release to the public. In 2012, a fixed price Carbon Tax was implemented with plans to proceed subsequently to an emissions trading scheme by 2015. However, in July 2014, the Carbon Tax was repealed after a change of the government. Even though the Carbon Tax was in place for only two years, it is possible that Australian companies might have experienced direct consequences from these tighter regulations than had been the case previously. It also plausible that companies might have changed their environmental strategies and internal management

practices to reduce the impact of such regulatory pressures. The current study was conducted between 2012 and 2013 when the Carbon Tax was in place. Thus, the Australian context provides some valuable insights into understanding companies' actions on emissions management in response to high stakeholder pressure. The theoretical background is discussed in the following section.

Theoretical background

The basic premise of stakeholder theory is that the success of a firm depends upon the successful management of its relationships with stakeholders (Freeman 1984). This argument surpasses the conventional objective of maximising shareholders' wealth as it recognises the importance of a nexus of explicit and implicit contracts that a firm has with various stakeholders (Jensen & Meckling 1976). Freeman (1984) argues that corporate strategies need to be assessed as functions of stakeholders' relative cooperative potential and relative threats. Relative cooperative potential is assessed based on a particular stakeholder group's ability to help the company in achieving its objectives. Conversely, the relative threat of a stakeholder group is assessed based on the ability of that stakeholder group to prevent the company from achieving its objectives. Thus, managers use different strategies in managing different stakeholder groups and the selection of a particular strategy depends on the capability of various stakeholder groups to influence corporate actions.

Figure 1 shows the strategic formulation developed by Freeman (1984), which explains different types of stakeholder groups and possible appropriate strategies for use by managers in handling those stakeholder groups. In managing the most important and powerful stakeholder group – *Swing* stakeholders – managers could use strategies which ensure that they collaborate closely with these stakeholders (Freeman 1984). As such, managers could change the kinds of decisions that are made or change their transaction process in line with the demands of *Swing* stakeholders. Freeman (1984) labelled these type of strategies as 'change the rules of the game'. On the other hand, the *Hold* stakeholder group could be managed with strategies that *Hold* the companies' current strategic positions. Examples of *Hold* strategies are, doing nothing or monitoring existing programmes and guarding against changes in the transaction process. *Offensive* stakeholders can be managed by



Figure 1. Generic stakeholder strategies. Source: After Freeman (1984), Exhibit 5.5 Generic Stakeholder Strategies, p. 143.

using *exploit* strategies, such as taking actions that the stakeholders view more favourably or showing that the company adopts the stakeholders' positions. In managing *Defensive* stakeholders, managers could use non-mutually exclusive strategies that can be employed in combination if necessary.

Some studies have adopted Freeman's (1984) framework to investigate the relationship among strategic formulation, environmental performance, and stakeholder pressure (Buysse & Verbeke 2003; Sharma & Henriques 2005). Figure 2 illustrates the conceptual framework developed for the current study. Drawing from the literature on stakeholder pressure, it identifies four main factors that drive the emissions management actions of companies: (i) regulatory compliance; (ii) cost; (iii) reputation; and (iv) discharge of social responsibility. Thereby, the current study investigates how managers perceive these pressures in relation to climate change actions of companies. Additionally, using Freeman's framework, the study investigates why companies prioritise the demands of some stakeholders over those of others, and proposes possible explanations for different carbon emissions management strategies.

Sample, data, and research method

The objective of this study is to gain some understanding of the implications of stakeholder pressure on climate change strategies and the use of management accounting practices within large Australian companies. In that respect, the most suitable method of collecting data is through in-depth interviews with the senior managers involved in carbon emissions management. A purposive sample of 20 large companies (10 HCI and 10 LCI) was contacted using personal contacts, telephone calls, posted letters, and e-mails. Eighteen companies responded positively to the request and the researcher was able to conduct 39 in-depth semi-structured interviews with their carbon emissions managers.

Of the 39 interviews, 19 were conducted face-to-face and 20 by telephone. Convenience and cost effectiveness were the main reasons for conducting the interviews by telephone

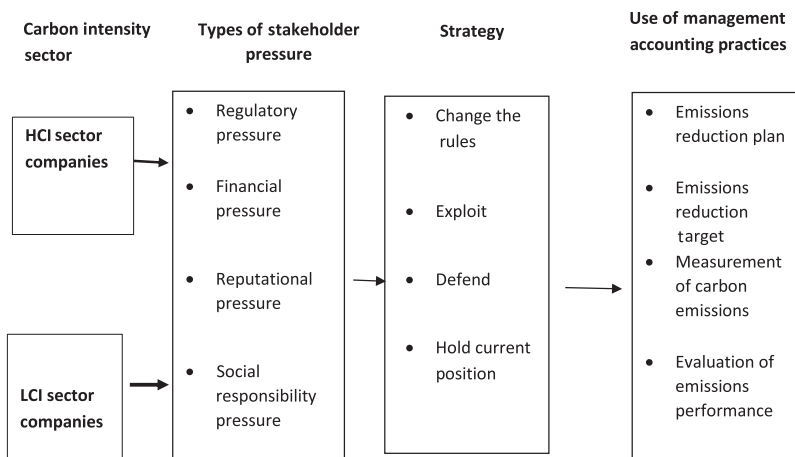


Figure 2. Stakeholder pressure, strategies, and use of management.

instead of face-to-face. All interviewees conversed with by telephone were located either in Sydney or Perth, with the researcher being based in Melbourne. As the objective of the research was to gain a clear understanding of the influence of stakeholder pressure on climate change strategies and the use of management accounting practices within the sample companies, the mode of interview (i.e. face-to-face or telephone) was not expected to influence the quality of interview data (Sturges & Hanrahan 2004). The average interview length was 40 minutes with a range of 25–50 minutes. Notes were made for three interviews, while the others were recorded on audio devices, transcribed and made available for review to interviewees; none requested subsequent amendment. All 39 interviews were conducted between December 2012 and June 2013.

The interviewees were managers designated as carbon emissions managers, sustainability managers, risk managers, financial accountants, or management accountants. Of the 18 sample companies, nine were members of the HCI sector, while the interviewees were from the LCI sector (see Table 1). To identify each interviewee separately, an identification code based on their professional qualifications and industry sector was designed. For example, if an interviewee was an engineer who represented a company in the HCI sector, and the interview number was three, the interviewee's identification code was [HCI(E)3].

Findings and discussion

Stakeholder pressure and strategies

The analysis of interview data revealed that the financial pressure exerted by the Carbon Tax was the most influential factor that forced HCI companies to take actions on emissions management.

... there's a carbon price – or a Carbon Tax – being put in place, and the threat is our operating costs will increase, and we won't be able to pass that cost on through to our customers, and, therefore, our earnings suffer as a result. [HCI(A)9]

Additionally, the increase in electricity and energy prices, because of the Carbon Tax, was seen as another influential factor that brought cost threat to HCI companies.

... the cost impetus of the cost of energy has certainly pushed us to try and reduce that energy/carbon footprint, because, well, energy prices have been going up. [HCI(S)4]

It is clear that the Australian government used the Carbon Tax as a mechanism to influence HCI companies to respond to the government's wishes by bringing financial threat. However, the potential for the government to cooperate with companies is high through

Table 1. Interviewee demographics ($N = 39$).

Professional qualifications	Low carbon intensive (LCI) sector companies	High carbon intensive (HCI) sector companies	Number of interviewees
Accounting (A)	3	5	8
Environmental sustainability (S)	6	3	9
Engineering (E)	4	9	13
Other (O)	8	1	9
Total	21	18	39

the provision of financial incentives to induce low energy investment. For example, the Energy Efficiency Program (EEP), run by Low Carbon Australia on behalf of the Australian government, provides financial assistance for Australian companies to invest in energy efficiency projects (Low Carbon Australia Annual Report 2012). As such, HCI sector managers see the government as a stakeholder possessing high potential to cooperate while having an equally high potential to threaten their firms' stability. Thus, the Australian government can be identified as a *Swing* stakeholder with high influence in relation to its cooperation and threat potential to HCI companies (Freeman 1984).

Conversely, the government does not appear to be a salient stakeholder to LCI companies with reference to carbon emissions issues. Even though there were some regulatory reporting obligations under the NGER Act, LCI sector companies did not see these as threats.

So it's [regulatory reporting requirements] not too much of a concern at the moment. ... the main problem I do with the regulatory environment is just the time spent in reporting. [LCII (E)18]

The carbon tax may not have affected LCI sector companies directly. However, there was an indirect impact on them through increased energy prices, driving some of them to monitor their energy consumption closely.

in terms of rising [energy] cost ... we're just going through a process now ... where we'll use our finance team to help develop all the ROI and NPV calculations associated with each of the potential opportunities in relation to energy reduction. [LCI(O)11]

Based on an analysis of the interview information provided by the LCI representatives, it is evident that, although the government exerted some influence, it did not apply the same level of pressure on LCI companies as it did on HCI companies in managing emissions. Therefore, it could be argued that the government was seen by LCI sector managers as a *Hold* stakeholder (i.e. relatively little threat and help in managing their risk regarding to climate change issues).

For LCI sector companies, communities seem to be a salient stakeholder group, as they could exert reputational pressure to threaten a company's legitimacy. As one interviewee explained:

... greater community concern around the issue of climate change that there were risks of negative brand perception for companies who were not seen to be proactive in relation to climate change and their emissions. So that's part of the reason to put in place emission reduction targets ... [LCIF(O)1]

Although communities have some influence over corporate legitimacy, they do not possess the same power held by the government over HCI companies. For instance, communities cannot exert the same financial pressure as the government in the form of taxes and sanctions. Therefore, it could be argued that LCI companies see communities as an *Offensive* stakeholder group that can help a great deal in achieving companies' objectives, but they pose a small relative threat (Freeman 1984). Interestingly, no HCI representative perceived community concern as a driver for the use of accounting practices in emissions management. This may be due to the fact that HCI companies had already been driven by regulatory requirements to use accounting practices and, therefore, incremental community pressure was not needed.

As explained above, the Government, being a *Swing* stakeholder, brought direct financial threats to HCI companies. When the political cost of government intervention through fines and taxes is high, management is likely to attempt to minimise such political costs by altering the investment or production decisions of their company (Freeman 1984). Accordingly, Roberts (1992) found that a higher level of perceived government influence on companies' actions leads to greater efforts by management to meet the expectations of government. These assertions were visible from the following explanation from one HCI representative:

The carbon price is a good driver for our company to look to focus resources on reductions in emissions because while there is the ability to do it, the company hasn't focused on it to the extent that it has since there's been a dollar value attached to it ... [HCI(S)7]

The information reveals that, due to strong intervention by government in the HCI sector through the Carbon Tax and the increasing energy prices, greater effort is expected from HCI sector companies to organise their business activities to minimise or avoid these political costs. The responses of the representatives of the HCI sector resemble an attempt to 'change the rules of the game' by changing their internal and external management practices (Freeman 1984). The following explanation provides evidence on how companies responded positively and acted upon the Government's wishes to reduce carbon emissions:

I think it's [the Carbon Tax] has accelerated projects, which have a large impact or a large carbon reduction. I think it's certainly accelerated that, because it's brought those in line with a lot of companies' payback periods and financial hurdles. [HCI(E) 12]

Conversely, for LCI sector companies, pressure on reputations exerted by communities seemed to be the main motivational factor which encouraged them to take actions on emissions management. However, communities lack the power to exert significant financial pressure on companies given the significant costs involved in organising collective action against companies. It seemed that LCI sector managers see communities as a group with relatively low threat potential (i.e. in terms of financial threat), but with high relative cooperative potential; that is, an *Offensive* stakeholder. It is evident that LCI companies used *exploit* strategies to manage the pressure exerted by communities.

... it's again the reputational threat of not being seen to be doing enough, and also not understanding the carbon risk associated with some of our particularly larger, or more carbon intensive clients. [LCIF(S)7]

Again, it is seen that the financial threat resulting from energy price increases persuaded some LCI companies, more specifically the retail companies, to reduce their energy costs.

... a large proportion of our emissions are obviously from our electricity use and our refrigeration. So both of those have costs attached to them. It certainly makes sense to be addressing them from a financial perspective. [LCI(E)1]

It appears that some LCI managers take actions on climate change issues not merely to portray their proactive stance, but also to manage their energy costs. Thus, some LCI sector companies have chosen the *Hold* strategy as a means of controlling the issue of increasing energy costs rather than attempting to 'change the rules of the game' (Freeman 1984).

In summary, it is evident that financial and reputational risks enforced by the Australian Government and the community have had significant influence on Australian companies' response to climate change issues. Managers took into account the stakeholders' relative potential to cooperate and/or their potential to threaten the survival of their firm in formulating their climate change strategies (Freeman 1984). Based on the strategies chosen, it is possible to expect companies to adopt different action plans in achieving their strategic objectives. In relation to actions, the current study more specifically focuses on the use of management accounting practices in mitigating risk associated with climate change issues. Thus, by applying Freeman's (1984) strategic formulation framework, this study attempts to explain whether the different approaches uncovered for HCI and LCI companies were reflected in their use of accounting practices to manage carbon emissions and associated risks.

Strategic response and the use of management accounting practices

In supporting their strategy to reduce emissions (i.e. to achieve companies' objective of reducing energy cost and satisfying the Government's objective of emissions reduction), HCI companies seem to use management accounting practices as a decision support system. For example, these companies appear to have adopted the setting of targets on emissions management, emissions measurements, and the provision of energy reduction incentives mainly in order to facilitate effective implementation of their climate change strategies. The following view reflects this perception:

The history of the manufacturing operations is very energy intensive. So managing energy use, energy consumption, has been a key focus of the business since it started ... In terms of managing carbon ... [they] weren't fully captured before; only since Carbon Tax comes in. [HCI(E)8]

It was also seen that some HCI companies set emissions targets in response to regulatory requirements and to demonstrate their commitment to reducing carbon emissions.

I will have a target around reducing greenhouse gases and also some targets around meeting legislation. If I hit all those targets, then I will achieve a financial bonus at the end of the year. [HCI(S)7]

Moreover, even though all nine HCI companies had some kind of climate change-related targets, only four reported specific targets for emissions reduction. The other five companies had financial targets or energy efficiency targets that affected emissions management directly. They believed that having energy or financial targets related directly to energy costs provided a more practical approach than setting targets for emissions reduction. The main reason for this attitude appears to be that a company's key desire for successful emissions management is to reduce its energy costs.

So, we don't have any emissions targets so to speak. We have financial goals; one of my goals in my role is to beat the market price of the carbon. So, if we can identify projects that come in at \$20 a tonne, and they've got a payback period of one year, well, they make actual returns ... [HCI(E)1]

Both HCI and LCI companies measure their carbon emissions. For HCI companies, the regulatory requirements were the main motivator for doing so:

To more publicly measure and disclose, that was most certainly the NGRS Act that drove that. [HCI(E)1]

In considering the incentives, only one HCI company claimed that it provided incentives to personnel directly relating to emissions management. However, the executive who represented that company did not want to elaborate on it during the interview.

There – I can't comment on – there will be incentives for, possibly, particular employees. But I can't really comment, as an overall, singular incentive. [HCI(E)12]

Even though sample companies do not have emissions reduction incentives in place, they used incentives for energy efficiency, which they believed indirectly influenced carbon emissions management.

We don't [have] separate carbon emissions [incentives] because over 90 per cent of our emissions come from gas and then we have emissions associated with diesel, electricity. It comes back to work the people have done to save energy. It's the same for us as work to save emissions. [HCI(A)6]

Thus, based on the interview evidence, it is arguable that HCI companies use management accounting practices, such as planning and target setting, measurement and performance evaluation, as an action plan in supporting their climate change strategy (i.e. 'change the rules of the game'). This enables such enterprises to use management accounting techniques to better manage both the financial and compliance risks imposed by the Government.

Conversely, pressure on reputations exerted by communities seemed to be the main motivational factor encouraging LCI companies to use accounting practices in emissions management. These companies see communities as a group posing a relatively low threat (i.e. in terms of financial threat), but with high relative cooperative potential; that is, they constitute an *Offensive* stakeholder. It was observed that some LCI companies used accounting practices as a 'guise' to portray their proactive strategies for carbon emissions management to create or maintain a good image. As the following explanation reveals, setting emission targets were motivated primarily by the desire to enhance reputation:

... it's something to talk to our customers about; it's something to talk to our shareholders about. It's more of a PR thing ... obviously we're reducing our emissions where possible, so the targets probably aren't going to change that ... [LCI(E)14]

It was also evident from the interviews with financial sector representatives that they used emissions measurement and external reporting as tools to manage reputational risk.

... reporting to Carbon Disclosure Project and Dow Jones Sustainability Index ... those surveys is talking about your approach to measuring and managing your emissions. I think it's – to be seen not to be doing otherwise, it probably a bigger threat, than to be doing it. [LCIF(O) 4]

This may be because the financial pressure exerted on financial sector companies by increased energy prices may not be as significant as for other LCI firms, such as retailers. These symbolic behaviours by financial sector companies resonate with findings from previous studies (Hrasky 2012). Stakeholder exploitation could be minimised by empowering stakeholders to engage in more participatory forms of corporate governance Owen et al. (1997).

The LCI managers do not seem to perceive the government as a stakeholder with relatively high cooperative or threat potential in relation to emissions management. However, the increase in energy prices resulting from government actions put pressure on some LCI sector companies, particularly retailers, to take actions on managing energy costs. It is clear that the financial threat resulting from energy price increases persuaded some LCI companies to use accounting practices to gain a clear understanding of their energy costs and to manage those costs effectively.

We have almost finished a very structured detailed plan ... – specifically in relation to energy – about how to manage energy across the organisation better, which would be the introduction of some measures and some active tracking against the measures ... [LCI(O)15]

It was seen that some LCI sector managers use accounting practices not merely to portray their proactive stance, but also to monitor energy cost in order to take corrective actions to reduce them. Thus, it appears that some LCI companies chose the *Hold* strategy as a means of controlling the issue of increasing energy costs rather than attempting to ‘change the rules of the game’ (Freeman 1984). Some of these companies used management accounting practices as facilitators to support successful achievement of energy cost management strategies.

The company is a lot closer to its power charges, forecasting, usage and measurements than it ever has been in the past. Using the management accounting system and tools at our disposal it enables the company to understand its cost structures better and try and minimize it. [LCI (A)13]

On the other hand, it was evident that, like HCI firms, the LCI companies used energy incentives to encourage employees to reduce energy consumption and enhance other environmentally friendly actions. The reason for using energy incentives instead of emissions reduction incentives was explained thus by one LCI representative as follows:

... if I were to call it a carbon emissions management [incentive scheme], no, because they wouldn't get it. If I were to say this is an energy – or reducing energy, increased recycling, reduced gas emissions – they would get it, because it's more hands on. [LCI(E)1]

In summary, it was evident that even though climate change risks influenced companies to use accounting practices for emissions management, the way in which companies utilised these practices depended on the carbon emissions management strategies adopted by them, which in turn was driven by companies' responses to the demands of their salient stakeholders. Irrespective of whether this action was motivated by regulatory, financial, or reputational pressure, organisational actions on climate change issues were seen to be driven primarily by the ‘business case’ for protecting their economic interests (O'Dwyer 2003).

Use of management accounting and emissions performance

Notwithstanding the different strategic intentions that HCI and LCI companies have for using accounting practices, the evidence obtained through the interviews revealed visible benefits from using management accounting practices for emissions management (Kumarasiri & Jubb 2016). For example, setting targets allow them to stretch their businesses in order to reduce and focus well on emissions management.

So certainly measurement, setting challenging but achievable targets, it stretches the business to really reduce our carbon footprint, and increase our performance against our carbon intensity [HCI(E)12]

Similarly, almost all the representatives claimed that measurements enable them to gain a better understanding of emissions drivers and to reduce their emissions both effectively and efficiently.

Essentially what it [measurement] does, is it tells us quite specifically where our emissions are coming from. ... So it allows us to identify hotspots, if you like, or areas of best practice which can be used to try and improve outcomes. [LCI(A)1]

Interviewees also claimed that accounting supports them to communicate carbon emissions issues effectively across their businesses and to push for more action towards effective emissions management.

I guess [it] made us, as a community, more aware of what we're doing. It's allowed us to set targets. That's the main benefit I suppose, and then [to], in turn, reduce it. It's allowed us to see how we fare against other organizations in our industry. [LCI(O)4]

The managers interviewed suggested that accounting not only provides valuable information that enables better decision-making towards a greater understanding of carbon emissions issues, but also provides feedback and feed-forward information on emissions management. Furthermore, the managers believed that this accounting information opens up different aspects of carbon emissions issues, which enables them to uncover new opportunities and risks associated with efficient carbon management.

it provides the opportunity to provide insight back to a number of areas in the business that in terms of the choices we make, the type of materials we use, and the type of equipment we use increasingly – their efficiency and also their carbon output. [LCI(A) 6]

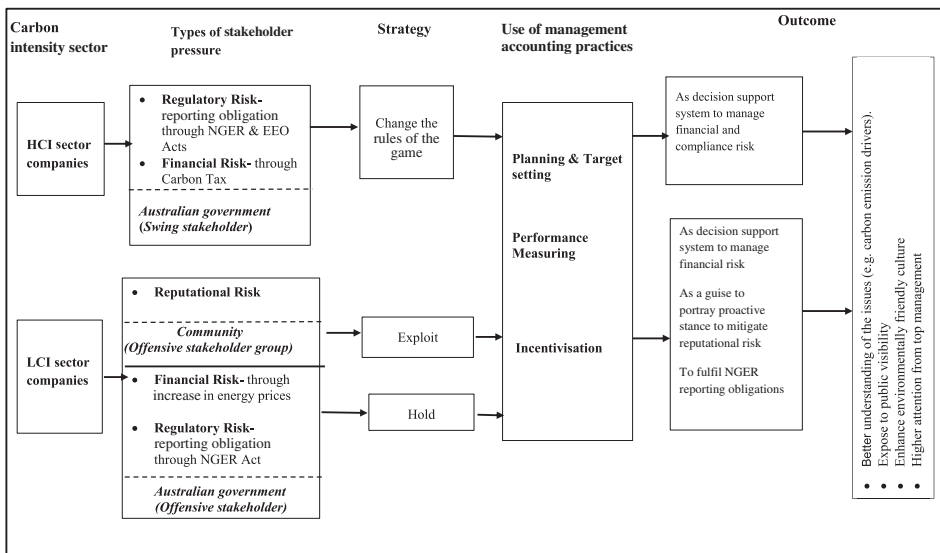


Figure 3. Stakeholder pressure, strategies, and use of management accounting practices.

Finally, even though there was agreement among interviewees that management accounting practices help facilitate carbon emissions management, there was a significant underutilisation of these practices. In considering incentives provided, only one HCI company provided any incentives to personnel relating directly to emissions management. Monetary reward to employees in relation to emissions reduction was an essential tool in driving companies' emissions reductions (CDP Global 500, 2013). Therefore, this lack of direct incentives for emissions management could result in less importance being placed by employees on emissions reduction actions. Reward systems are crucial in creating a culture in which employees understand, and work toward, corporate social and environmental goals (Epstein & Buhovac 2014).

Figure 3 depicts the connections between the action drivers, use of management accounting and the outcome of the use of such practices as discussed above.

Conclusions

Drawing from the propositions and arguments developed by Freeman (1984) under stakeholder management, this study attempted to enhance our understanding of the reasons behind the different strategic approaches adopted by LCI and HCI companies and their implications for the use of management accounting practices in managing carbon emissions and the associated risks. By acknowledging the different motives behind the use of management accounting practices between the two sectors, deep insights were revealed relating to the factors that drive the climate change actions of companies. The study was conducted at a time when an important piece of regulation on climate change risk (i.e. the Carbon Tax) was implemented in Australia. This environment provided an ideal setting within which to investigate how stakeholder pressure influences strategic formulation in relation to emissions management and the use of management accounting practices by large Australian companies.

This study contributes to the body of literature in two main ways. Firstly, it provides insights into how pressure from stakeholders influences corporate strategies in relation to climate change risk. Consistent with Freeman's propositions, it was evident that stakeholder pressure had a significant influence on the actions of companies on emissions management. In addition, company managers use different strategies in managing different stakeholder groups and the selection of strategies depended on the ability of stakeholder groups to influence corporate actions. Secondly, the findings of the current study will enhance our understanding of whether management accounting is used and, if so, how the companies have used it in managing climate change risks. There has been considerable empirical research on how companies respond to climate change issues. However, the empirical research that looks into how management accounting is used as a tool in managing risk associated with climate change issues is limited. The study contributes to the existing literature on climate change and broader management accounting research by providing some insights into how climate change risks influence the use of management accounting techniques in managing emissions risks, and how they are used by corporate strategic decision-makers in doing so.

It is evident from the data that the motives behind the use of management accounting by the two carbon intensive sectors were different; the use made by each depends on their climate change risk management strategies. It was evident that the HCI companies use

accounting practices mainly in managing financial and regulatory risks, whereas for the LCI companies, it was driven mainly by the necessity of managing both reputational and financial risks. Furthermore, in line with their *exploit* strategies, it was seen that some LCI companies used accounting practices symbolically for the sake of portraying a proactive image. This misuse of accounting practices to manage stakeholders is not only disadvantageous to both the broader community but also to the internal decision-making processes of the companies. The lack of power held by stakeholders could provide opportunities for companies to exploit their stakeholders. Empowering stakeholders to influence better corporate governance could minimise such exploitation.

Finally, the interviews revealed that the financial risk that resulted from the Carbon Tax brought a sense of urgency and pressure for companies to take actions on emissions management. Even though companies have been measuring and reporting their carbon emissions to comply with the requirements of the NGER Act, it appears that managers used emissions data for internal decision-making only after they saw a financial risk coming from the Carbon Tax. Therefore, among the different environmental policy instruments, an economic instrument (the Carbon Tax) was seen as an effective mechanism that drove the climate change actions of companies.

The study is limited to 18 large Australian companies represented through the perceptions of 39 semi-structured interviews with managers responsible for emission management. Therefore, the findings may not be generalisable to other national settings.

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